DOCUMENT RESUME

ED 024 939 AL 001 639

By- Nash, Rose

Intonational Interference in the Speech of Puerto Rican Bilinguals, an Instrumental Study Based on Oral Readings of a Juan Bobo Story.

Pub Date 68

Note- 57p.

EDRS Price MF-$0.25 HC-$2.95

Descriptors- *Bilingualism, *English (Second Language), *Interference (Language Learning), *Intonation, Mutual Intelligibility, Phonology, *Spanish Speaking, Suprasegmentals, Verbal Communication

This paper examines three aspects of phonological interference observable in the speech of Puerto Rican bilinguals: (1) segmentation patterns, (2) accentual patterns, and (3) pitch patterns. Ten representative speakers, including nine students and one faculty member, were selected to read a story in the original Spanish and in English translation. One reader had native fluency in English but heavy interference in Spanish. The other nine readers all had native fluency in Spanish with varying degrees of fluency in English: three had native fluency, three had a slight foreign accent, and three had heavy interference. The taped corpus was first subjected to intensive auditory analysis and description. Stresses, melodic curves, and junctures were marked for each speaker in both versions. Instrumental processing of the tape recording yielded graphic stripchart displays of pitch and intensity, from which detailed measurements were made for peak pitches and all pause lengths over .3 seconds. Instrumental data were correlated with the descriptions obtained from auditory analysis, and the various versions of the speakers were then compared. Part I of this document presents the theoretical background for intonation analysis and discusses the relationship between interference and intelligibility. Part II gives the text and procedures used and explains the interferences found. (DO)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

INTONATIONAL INTERFERENCE IN THE SPEECH OF PUERTO RICAN BILINGUALS

An Instrumental Study Based on Oral Readings of a Juan Bobo Story

by

Rose Nash
Inter American University
San Juan, Puerto Rico
1968

ED024939

AL 001 639

INTONATIONAL INTERFERENCE IN THE SPEECH OF PUERTO RICAN BILINGUALS[1]

I. Introduction

1. Classification of Bilingual Speakers
2. The Relationship between Interference and Intelligibility.
3. Theoretical Approach to Intonation Analysis

II. Findings

4. Text and Procedure
5. Interference in Segmentation Patterns
6. Interference in Accentual Patterns
7. Interference in Pitch Patterns
8. Observations

Notes and References

1. CLASSIFICATION OF BILINGUAL SPEAKERS

Bilingualism is here defined as the habitual use of two languages (Weinreich 1953). In such a language-contact environment, the languages influence each other on all levels of structure.[2] When the carryover from one language into another is sufficient to intrude into the communication situation, it is termed interference. The purpose of this paper is to examine some aspects of phonological interference observable in the speech of Puerto Rican bilinguals.

Phonological interference runs the gamut from a slight foreign accent to speech which is incomprehensible. When a person learns a second language, he tends to transfer the entire system of his own language. "He tends to transfer his sound system, including the phonemes, the positional variants of the phonemes, and the restrictions on distribution. He tends to transfer his syllable patterns, his word patterns, and his intonation patterns, as well." (Lado 1955). The extent to which such interference hampers communication depends not only on the amount of distortion of the norms of the second language, but also on the effect of such distortion upon a hearer's ability to decode the message.

What is needed first of all, therefore, is a rough working classification of bilingual speakers based upon intelligibility. If we assign a rating of 1 to the native speaker, a rating of 2 to the non-native but fluent speaker, and a rating of 3 to the speaker who is difficult to understand because of heavy interference, we can establish the following bilingual speaker types:

	S1 / E3	
intelligibility	S1 / E2	intelligibility
in Spanish	S1 / E1	in English
	S2 / E1	
	S3 / E1	

While such a scheme is useful for providing reference points in the continuum of gradually increasing and decreasing intelligibility, it must be emphasized that the classifications represent only intelligibility in speaking, and not proficiency in the language. In a measure of proficiency, the various ratings of 1 would not necessarily be equal to each other. According to Weinreich, a bilingual who commands two languages equally well (S1/E1) commands neither as well as a monolingual of either language who has the same social and educational background. Nevertheless, there are countless bilinguals who can switch from one language to the other with no apparent carryover, and, if they so wished, could effectively disguise the fact that they commanded the other language as well. It is even possible for a speaker to be able to say a few sentences in a second language with perfect mastery of its phonological system without being able to carry on a conversation, or to "sound" like a native when he is actually speaking gobbledegook, as many comedians do. In short, a rating of intelligibility for a particular speaker is independent of proficiency. This does not exclude the possibility that carryover is present; but it is recognizable as such only to the trained researcher.

To a considerable extent, the classification suggested above can be correlated with extra-linguistic factors in the social and cultural life histories of the speakers. In fact, the degree of phonological interference which a speaker exhibits is largely determined by such factors (Weinreich, 1963, p. 3). A brief look into the backgrounds and life situations of typical Puerto Rican bilinguals would reveal some of these influences:

S1/E1 (native fluency in both languages). This hypothetical speaker spent a good part of his formative years in an English-dominated environment, and one or both parents are native English speakers. He attended public schools in the continental U.S. (probably in New York) or private schools in Puerto Rico.

S1/E2 (native fluency in Spanish, non-native but fluent in English): This speaker spent his childhood in Puerto Rico in a Spanish-dominated environment. Through necessity or through choice, he was away from Puerto Rico for several years, returning as an adult. He spent some time in the Army, or lived in the continental U.S. He uses English daily in his work and expresses himself with ease. He is aware of his foreign accent and wishes he didn't have it.

S1/E3 (native fluency in Spanish, heavy interference in English): This speaker has spent most or all of his life on the island. He attended public schools, where his English teachers were non-native speakers with inadequate training. He has had little opportunity, or has not taken advantage of opportunities, to use English outside of school. He is heavily reading-oriented, as most or all of his textbooks are written in English. He is not aware of the extent to which his Spanish interferes in his spoken English, and is frequently frustrated by his failure to make himself understood by E1 speakers, a frustration compounded by the economic necessity to speak English well in order to get a good job. He has strong emotional inhibitions in communication situations involving English, and, if given a choice, will express himself in Spanish.

E1/S3 (native fluency in English, heavy interference in Spanish):

This speaker came to Puerto Rico as an adult. His linguistic background is almost exclusively English. He would like to speak Spanish well so that he could participate in the cultural life of the island. There is, however, little or no economic motivation to learn Spanish. His friends, teachers, and business associates are E1 or E2 speakers, and other people with whom he comes in contact in daily life recognize him as a continental and address him in English. The existence of English-language television, radio, and newspapers adds to his security in maintaining English as his primary language. Unless he has good aptitude for learning foreign languages, he will probably remain an S3 speaker. (Weinreich, 1963, p. 73).

There are no E1/S2 speakers represented in the study.

2. THE RELATIONSHIP BETWEEN INTERFERENCE AND INTELLIGIBILITY

The mechanical source of interference lies in the articulatory muscles of the speaker; his physiological apparatus can habitually produce only the sounds and combinations of sounds that they have been trained to produce. A judgment of intelligibility, on the other hand, lies in the ears of the hearer; he can recognize as information-bearing linguistic units only those sounds and combinations of sounds which his perceptual experience has trained him to recognize. Between these two ends of the communication channel the presence of noise can affect the successful transmission of a spoken message. It has been shown by experimental investigation, for example, that articulation by speakers having foreign accents is approximately 40% less intelligible than native speech (Lane 1963). Other non-structural factors which play a role in speech perception include: familiarity with the content of the discourse, and the number of situational cues present in the communication setting.

Perhaps the most important factor, however, is the hearer's own linguistic status as a bilingual. For example, an S1/E3 speaker who cannot make himself understood when speaking English to a native English speaker will have no difficulty conversing in English with _another_ S1/E3 speaker. "When the other interlocutor is also bilingual, the requirements of intelligibility... are drastically reduced. Under such circumstances, there is hardly any limit to interference; forms can be transferred freely from one language to the other and often used in unadapted shape." (Weinreich, p. 81).

It is clear, then, that any description of interference phenomena and their effect upon intelligibility must proceed from the point of view of a hearer who is conditioned solely to the norms of his own native language and for whom departures from those norms on the part of a speaker will cause difficulty in understanding. With increasing exposure to imperfect speech and the native language of the imperfect speaker, his perceptual apparatus will undergo a process of modification, and he will make more and more allowances and adjustments until, finally, the interference-laden speech may seem completely acceptable.

Assuming such a transformation has not yet taken place, how does the hearer handle interference? Disambiguation is accomplished through identification -- the mapping of aberrant sound combinations on to linguistic units stored in the hearer's repertoire. Only when the hearer has identified all the linguistic units in the speaker's stream of speech can he apply his knowledge of his own language to decode the message. The order of events is therefore:

Interference → Identification → Decoding

If the linguistic units cannot be identified by the hearer, the chain of events is broken off, and the result is unintelligibility.

Interference → (Unintelligibility)

There are two kinds of phonological interference: phonemic and intonational. Although they usually go hand-in-hand, a speaker may exhibit more of one kind. A judgment of intelligibility by the hearer derives from the total effect of both. Phonemic interference involves the identification of words, both in isolation and in combination. Intonational interference involves the identification of additional information not carried by words in combination.

The ease with which a particular instance of phonemic interference can be disambiguated depends on the frequency of mispronounced sounds, the degree of violation of the phonemic system of the language being spoken, the number of possible choices for identification, and the amount of context available to limit the choices.

In order for identification to be effected, two conditions must be fulfilled: 1) the particular linguistic unit uttered by the speaker must resemble a linguistic unit in the repertoire of the language; and 2) there must be an exclusive choice for mapping. If both conditions are not met, identification can not take place, and unintelligibility results.

When a word apoken in isolation has so many of its phonemes distorted by interference that it does not resemble a word in the stored repertoire, no identification takes place.

WORD = ?

When a word spoken in isolation resembles more than one word in the stored repertoire, no identification takes place.

WORD = WORD 1?
WORD 2?

Only when a word spoken in isolation resembles a single item in the stored repertoire can identification take place.[3]

/WORD = WORD/

Because the phonemic system of all languages overlap to some degree, the first situation is relatively rare. Examples of the other situations, however, are plentiful, and only a few need be cited here.[4]

Interference from Spanish			Interference from English	
[mɔ́ni]	= money		[grášəs]	= gracias
[públIk]	= public	Identification	[mənjǽnə]	= mañana
[əspík]	= speak	takes	[Inférmow[	= enfermo
[fámus]	= famous	place	[tʰǽkʰow]	= taco
[lif]	= live? leave?		[kʰǽrow]	= caro? carro?
		Identification		
[pik]	= pig? peak?	does not	[tʰówdow]	= todo? toro?
		take place		
[əstét]	= state? estate?		[ləgár]	= legar? lugar?

[bɔt] = < bought?
but?

[díyə] = < dia
diga?

[pul] = < pool?
pull?

[kʰənjádə] = < cuñada?
cañada?

Identification of spoken words which resemble more than one word in the stored repertoire (including homonyms) can take place if the word appears in a syntactic construction which limits the choices for mapping to only one:

/WORD in construction = WORD/

I bought it there.
*I but it there.

Todo el mundo lo sabe.
*Toro el mundo lo sabe.

Not all such multiple choices, however, can be resolved by syntactic frames:

[lif] He didn't < live / leave because of the epidemic.

[kʰənjǽdə] Me gusta mi < cañada. / cuñada. 'I like my little valley.' / sister-in-law.'

In such cases, the semantic context will limit the choices to only one, and identification can take place.

/WORD in construction in context = WORD/

He didn't leave because of the epidemic, and took his vacation later.

*He didn't live because of the epidemic, and took his vacation later.

He didn't live because of the epidemic, but his wife survived.

*He didn't leave because of the epidemic, but his wife survived.

Me gusta mi *cañada* verde. 'I like my little green valley.'

*Me gusta mi *cuñada* verde. 'I like my green sister-in-law.'

Me gusta mi *cuñada* con el pelo pintado.

'I like my sister-in-law with tinted hair.'

*Me gusta mi *cañada* con el pelo pintado.

'I like my little valley with tinted hair.'

Frequently, the spoken word resembles a unit in the repertoire having a meaning different from the one intended. Here, too, context enables the hearer to verify his choice and make the necessary correction in his identification:

I think so.

*I sink so.

And so it is with all cases of phonemic interference. A considerable amount of it can be tolerated by the hearer provided the words are not distorted beyond recognition, and provided he is given enough context to identify them. Indeed, if it were not so, communication among the peoples of the world would be at a standstill except through written language.

Turning now to the problem of intonational interference, we find that disambiguation is much more complex. Here, it is not the identification of meaning-bearing linguistic units which is crucial, but *identification of the meanings themselves*, which are superimposed over shorter or longer stretches of speech containing many linguistic units. The existence of the old truism "It's not what you say, but how you say it" is testimony to the importance of prosody in signalling meanings deeper and more pervasive than those of lexical constructions alone.

In the presence of intonational interference, can the conditions necessary for identification be fulfilled? That is, can a transferred intonation pattern be said to resemble one in the stored repertoire. (Condition 1), and the choice of its meanings be limited to one (Condition 2)?

In one sense, Condition 1 is easily fulfilled. All languages use the same materials for speech melody: pitch, rhythm, pause, and accent. Furthermore, although each language has its own stock of characteristic speech melody patterns, they share the same general contours. This is due to the physiological restraints on the vocal apparatus, and cuts across all cultures.

In another sense, Condition 1 is all but impossible to fulfill. Speech melody is structured independently of the segmental system, and can be transferred as a whole or in part to another language, carrying with it the unique flavor that sets it apart from other languages. A language, even an individual speaker can be recognized by prosody alone (Húltzen 1955).

With regard to Condition 2, limitation of choices is possible, but the probability of incorrect identification is high. Even in a monolingual situation, a given intonation contour may have several different meanings, depending on the utterance with which it is used. The stock of speech melodies in an individual language is highly stereotyped, so much so that the hearer is hardly aware of them in the stream of speech, unless the melody used with a particular utterance is somehow unexpected, unusual, or seems to contradict the meaning. For example, the melody customary for the command

Man the torpedoes!

is not customary for the command

Pass the salt!

The combination of lexical items in the second construction, together with the non-customary melody which accompanies it, signals the presence of a specific category of emotions on the part of the speaker (anger, irritation, annoyance, impatience, etc.) and this additional information becomes part of the total meaning of the utterance.

In an interference situation, the speech melody carried over from another language is hardly ever the customary one for a particular utterance, so that the hearer is continually aware of it and continually trying to identify the additional information which is apparently being signalled. Even the neutral or colorless pattern can carry quite different connotations when transferred. The Spanish pattern for flat statements, for example, signals disgust or disinterest when applied to an English statement; on the other hand, the English pattern signals strong emphasis when transferred to a Spanish statement (Stockwell 1965, p. 30). The hearer cannot, as is possible with phonemic interference, limit or verify his choices by context, as that, too, is spoken with inappropriate melody patterns. Because an intonational message always takes precedence over the lexical message, the hearer reacts to the unintended signals, and his response is conditioned by them, further deteriorating the communication situation.

The effect of intonational interference is thus cumulative. The hearer, unable to "tune in" to the speaker, cannot relate the total meaning of one utterance to the total meaning of the next, although the speaker may pronounce each individual word correctly. His successive utterances seem to the hearer increasingly incoherent, and he eventually sheds the heavy burden of diambiguation with a judgment of unintelligibility, or, what is more serious, misinterprets the message.

3. THEORETICAL APPROACH TO INTONATION ANALYSIS

An exhaustive account of the theory and methodology of the present investigation is presented in Nash 1967. What follows is a brief summary.[5]

Every known human culture possesses both language and music. The speech melody and musical melody of the same culture will bear many overt resemblances. The two kinds of melody not only have the same material components, but follow the general principles of construction. In function, however, they are quite different. The function of musical melody is to recreate a formal auditory design which is the product of a composer's imagination or the musical tradition of a culture. The recreation, each time the melody is performed, is a copy of the original. The function of speech melody is to mold the grammatical constructions of a language into acceptable utterances of that language, and it changes its form with each new utterance that is generated. Speech melody provides the raw material upon which the intonation system of a language operates to signal additional information not carried by lexical constructions alone.

Intonation is defined as the linguistic structuring of speech melody into a system of hierarchically organized intonation units and semantic relationships between intonation units.[6]

1) Intonation units are formally delineated by boundary markers, i.e. recurrent bundles of phonetic features perceived as breaks in the stream of speech, organizing it into segments of varying length and syntactic complexity. The composition of

the phonetic features is specified by the phonology of each language; for English and Spanish, they have most often been described as clause terminals consisting of open juncture and pitch movement (Stockwell 1965, Cárdenas 1960. Trager & Smith 1951), to which shorter or longer pauses may be added. The boundaries of intonation units do not necessarily coincide with the boundaries of syntactic constructions.

The positions and types of boundary markers in a particular corpus can be determined only by comparing the performances of several speakers. If all speakers make a break at the same place, then that position marks an *obligatory* boundary marker. If only some speakers make a break, then that position marks an *optional* boundary marker. In English and Spanish, the intonation unit which terminates in an optional boundary marker is a phrase.

By comparing the obligatory boundary markers, other intonation units can be isolated. If all speakers make a relatively long pause in the same place, then that position marks the termination of an *Oral Paragraph*. If the speakers collectively make both short and long pauses at a certain place, then that position marks the termination of a *Macrosentence*. Finally, if speakers both do and do not make pauses (where all make a perceptible break), then that position marks the termination of a *Clause*.[7]

To summarize, the intonation units and their boundary markers are:

Oral Paragraph	obligatory break + obligatory long pause
Macrosentence (=MS)	obligatory break + obligatory pause
Clause	obligatory break + optional pause
Phrase	optional break + optional pause

The hierarchical organization of a hypothetical text containing two Oral Paragraphs, each of which contains two Macrosentences, each of which contains two Phrases, would be as follows: (Fig. 1)

Text							
Oral Paragraph				Oral Paragraph			
Clause		Clause		Clause		Clause	
Phrase	Phrase	Phrase	Phrase	Phrase	Phrase	Phrase	Phrase

Fig. 1

2) The semantic relationships between intonation units are signalled by pitch motifs. A pitch motif is a sequence of two accent pitches.

A syllable can be pronounced without stress, but it cannot be pronounced without pitch. We may, therefore, speak of two kinds of pitch in speech melody: stressed pitch, and unstressed pitch. Only stressed pitches enter into pitch motifs. The unstressed pitch line forms a purely melodic counterpoint to the stressed pitch line.[8]

Stressed pitches vary in degree of prominence. Although prominence is not a function of pitch alone (length and intensity also play a role), the most prominent stress usually carries the highest pitch. For a lower-pitched stressed syllable to be heard as more prominentthan a higher-pitched stressed syllable, there must be a marked increase in intensity and/or length.

One other factor is extremely important in the perception of prominence, and that is the pitch movement around the stressed pitch. A sharp rise to, or a sharp fall from a pitch peak produces more prominence than a gradual rise or fall to the same pitch (Bolinger 1958, 1961).(See Fig. 2)

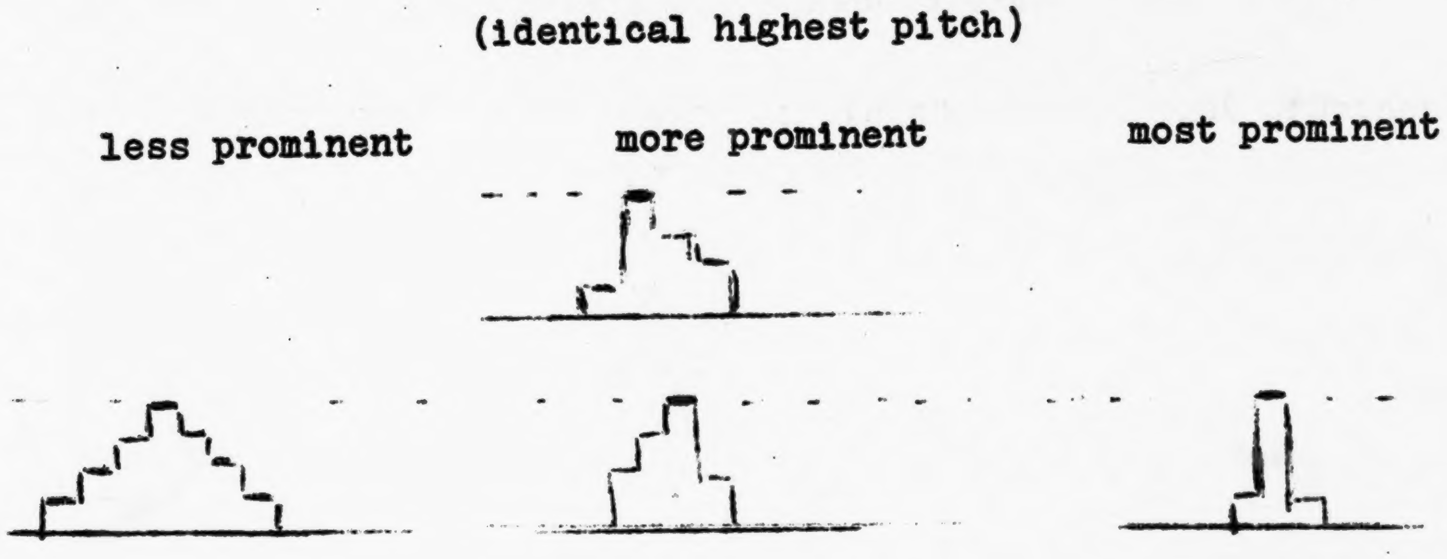

(identical highest pitch)
less prominent
more prominent
most prominent

Fig. 2. Relative prominence of pitch peaks

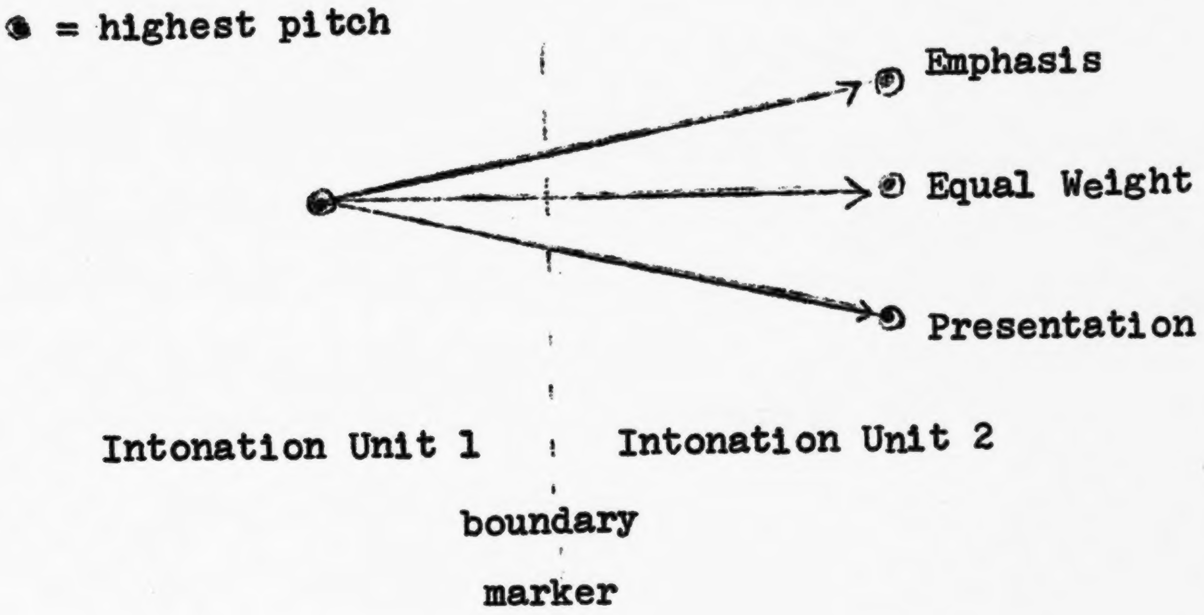

● = highest pitch
Emphasis
Equal Weight
Presentation
Intonation Unit 1
Intonation Unit 2
boundary
marker

Fig. 3. Pitch Motifs

The highest pitch of each intonation unit (which coincides with the most prominent syllable) is an accent. Accent pitches enter into pitch motifs which bridge boundary markers and signal semantic relationships between two neighboring intonation units on the same hierarchical level (i.e., adjacent Macrosentences, adjacent Clauses, adjacent Phrases, etc.). The exact musical interval between accent pitches is significant for individual languages, as it is in the music of individual cultures. Some pitch motifs, however, can be identified generally by direction of pitch movement alone. On the evidence of preliminary investigations, these appear to hold for most languages.[9]

The most natural pitch movement, and the one requiring the least expenditure of muscular energy, is downward (Bolinger 1958). To maintain a pitch requires slightly more energy, and a rise in pitch still more. A downward pitch movement between two successive accent pitches is the *Presentation Motif*. This is the unmarked relationship, and signals that the second intonation unit is to be interpreted on the basis of the lexical information alone, i.e., the intonation provides no additional information. A level pitch movement is the *Equal Weight Motif*, which signals additionally that the information in the second intonation unit is of equal importance to the the information in the first in the overall context. In effect, this produces a slight degree of emphasis. A rise in pitch between two accents is the *Emphasis Motif*, which signals that the information in the second intonation unit is of greater importance in the overall context than that of the first. The speaker thus has three choices for signalling semantic relationships (Fig. 3).

By applying these three motifs to a typical English utterance in the writer's Midwestern dialect of American English, the following interpretations are possible:

Presentation Motif

CORNED —————————— RYE
Max brought the beef, but he forgot the
bread.

Equal Weight Motif

CORNED —————————— RYE
Max brought the beef, but he forgot the
bread.

Emphasis Motif

RYE
CORNED ——————————
Max brought the beef, but he forgot the
bread.

The accent "represents" the entire intonation unit in the pitch motif, and the semantic relationship signified applies to all the lexical information in each unit. A change of lexical emphasis would not affect the relationship signalled by the pitch motif:

Emphasis Motif

GOT
BROUGHT ——————————
Max the corned beef, but he for-
the rye bread.

4. TEXT AND PROCEDURE

Ten representative speakers, including nine students and one faculty member, were selected to read a Juan Bobo story in the original Spanish and in English translation (Fig. 4).[10]

Bilingual speaker classification was as follows:

S1/E1 (native fluency in both languages)	3 speakers
S1/E2 (native fluency in Spanish, slight foreign accent in English)	3 speakers
S1/E3 (native fluency in Spanish, heavy interference in English)	3 speakers
E1/S3 (native fluency in English, heavy interference in Spanish)	1 speaker
	10

The taped corpus was first subjected to intensive auditory analysis and description. Stresses, melodic curves, and junctures were marked for each speaker in both versions. Instrumental processing of the tape recording yielded graphic strip-chart displays of pitch and intensity,[11] from which detailed measurements were made for peak pitches and all pause lengths over .3 seconds.[12] Instrumental data were correlated with the descriptions obtained from auditory analysis, and the various versions of the speakers were then compared.

Fig. 4 gives the complete text, listed in conventional sentences. The format of the story, and the subdivisions into major intonation units are as follows:

Juan Bobo Hace un Mandado*	Juan Bobo Goes on an Errand
1. Cuando Juan Bobo tenía ocho años era muy bobo.	1. When Juan Bobo was eight years old he was very stupid.
2. Nunca hacía las cosas bien.	2. He never did things right.
3. Su maestra siempre lo estaba corrigiendo.	3. His teacher was always correcting him.
4. Juan Bobo la quería mucho.	4. Juan Bobo liked her very much.
5. Un día, Juan Bobo le quiso hacer un regalo.	5. One day, Juan Bobo wanted to give her a present.
6. Decidió regalarle un cerdo que tenía.	6. H decided to give her a pig which he had.
7. Cogió el cerdo en brazos y hecho a caminar.	7. He picked the pig up in his arms and started walking.
8. El cerdo empezó a chillar y patear.	8. The pig began to scream and kick.
9. Por fin se soltó y se fué corriendo.	9. Finally it got loose and ran away.
10. La maestra le dijo a Juan Bobo: --Debiste amarrarlo con un cordón, Juan Bobo.	10. The teacher said to Juan Bobo, "You should have tied a string to it, Juan Bobo."
11. Juan Bobo empezó a decirse: --Debí amarrarlo con un cordón. Debí amarrarlo con un cordón. Debí amarrarlo con un cordón.	11. Juan Bobo began to say to himself, "I should have tied a string to it. I should have tied a string to it. I should have tied a string to it."
12. Al otro día, la maestra llamó a Juan Bobo.	12. On another day, the teacher called Juan Bobo.
13. --Juan Bobo--le dijo--hazme un mandado. Mi reloj se me quedo en casa. Tráemelo.	13. "Juan Bobo," she said to him, "Go on an errand for me. I left my clock at home. Brint it to me."
14. Juan Bobo se fué corriendo.	14. Juan Bobo went running.

15.	La maestra lo esperaba y lo esperaba.	15.	The teacher waited and waited for him.
16.	¡Qué mucho tardaba Juan Bobo!	16.	What a long time it took Juan Bobo!
17.	--¿Qué le pasaría? --pensaba la maestra.	17.	"I wonder what has happened to him," thought the teacher.
18.	Al mucho rato alcanzó a verlo.	18.	After a long time she caught sight of him.
19.	Andaba muy despacio, muy despacio.	19.	He was walking very slowly, very slowly.
20.	Traía el extremo de un cordón en la mano.	20.	In his hand he held the end of a string.
21.	Venía arrastrando el reloj por todo el camino.	21.	He had dragged the clock the whole way.
22.	Cuando llegó dijo: --Seguí su consejo. Lo amarré con un cordón. No se me ha podido escapar.	22.	When he arrived he said, "I followed your advice. I tied it to a string. It could not get away from me."
23.	¡Claro está! El reloj estaba destrozado.	23.	Obviously, the clock was ruined.

*Cuento popular portorriqueño, in Luis Rechani Agrait, Paginas de color de rosa, D.C. Heath & Co. , 1928, p. 5.

Total graphic words: 176	Total graphic words: 240
Total syllables: 379	Total syllables: 290
Syllables per word: 2.1	Syllables per word: 1.2

Fig. 4. Text in Spanish and English

Oral Paragraph 1 (1-11) SETTING

MS 1 (1-4) The characters are introduced.
MS 2 ((5-8) Juan Bobo commits his first blunder.
MS 3 (9-11) Juan Bobo learns a lesson.

Oral Paragraph 2 (12-23) MAIN ACTION

MS 4 (12-14) The teacher makes a request.
MS 5 (15-21) Juan Bobo commits his second blunder.
MS 6 (22-23) Punch lines.

All speakers in both versions reflected this basic organization of the story content. Invariably, longest pauses were made at the end of Oral Paragraph 1, and shorter but definitive pauses at the ends of Macrosentences. Groupings of smaller intonation units (Clauses and Phrases) varied according to the speaker's interpretation and the language being used to tell the story.

5. INTERFERENCE IN SEGMENTATION PATTERNS

When comparing the various readings of the story, it was frequently found that the discrepancies between E3 speakers (heavy interference from Spanish) and E2 speakers (non-native but fluent in English) were greater than the discrepancies between E3 speakers and E1 speakers. That is, the speakers with slight foreign accent exaggerated those features which they felt would make them more intelligible in English. This was especially evident in the matter of segmentation patterns.

S1/E3 speakers tended to make fewer internal phrase groupings than E1 speakers, while S1/E2 speakers tended to make more. The actual total number of breaks both with and without pause in the English version for each speaker was as follows:

Total breaks (open juncture with or without pause)

S1/E1: 27, 28, 29   E1/S3: 28
S1/E2: 30, 28, 30   (English version)
S1/E3: 24, 24, 25

S1/E1 and S1/E2 speakers (both fluent in English) tended to reduce internal breaks to juncture alone, or to omit them altogether in the Spanish version (Fig. 5). As a result, the Spanish verions for these groups of speakers had lnnger and fewer intonation units than their English versions, i.e., fewer boundary markers at optional positions.

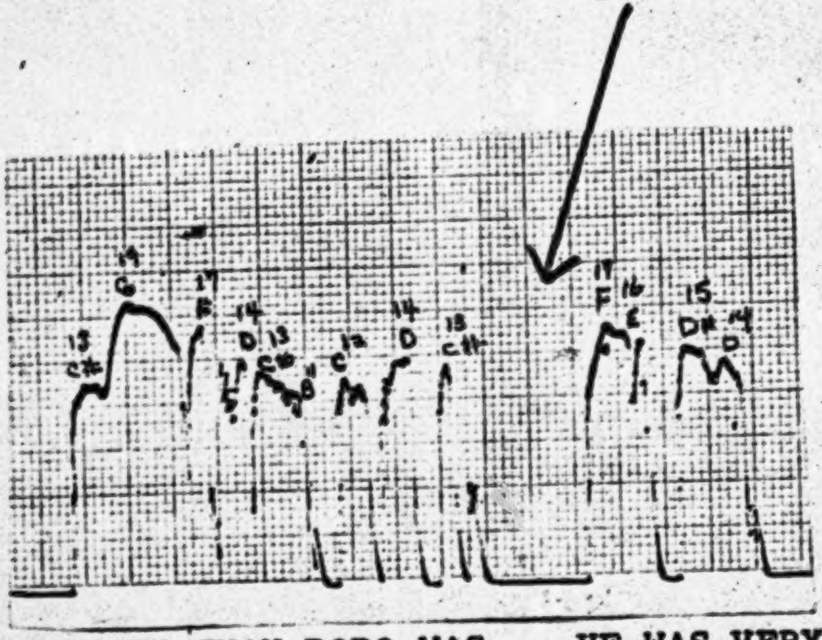
At obligatory boundary positions (Clause, Macrosentence, and Oral Paragraph), pause lengths varied widely. The averages are as follows for the English version:

	Average Length	Most Frequent Length	Total Pause Time
E1:	.7 sec.	.6 sec.	18 sec.
E2:	.7 "	.7 "	20 "
E3:	.4 "	.3 "	8 "

As is evident from these figures, there is a striking difference between the pause structuring of E1 and E2 speakers on the one hand, and E3 speakers on the other. E3 speakers made fewer pauses and shorter pauses at obligatory boundary positions. To the native speaker of English, this gives an impression of extreme rapidity in speaking.[13]

In reality, the impression is misleading. The rate of articulation (i.e., the speed with which words are pronounced) is quite independent of both pause length and pause frequency. A speaker whose speech appears to be so rapid that it is unintelligible may actually be speaking slowly.

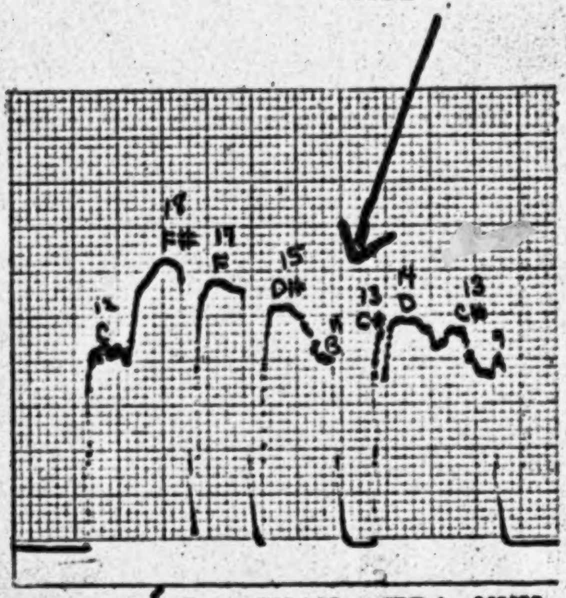
long break (.3 seconds)



WHEN JUAN BOBO WAS
EIGHT YEARS OLD.

HE WAS VERY
STUPID.

short break (juncture only)



CUÁNDO JUAN
BOBO TENÍA
OCHO AÑOS

ERA MUY
BOBO.

Fig. 5. • S1/E1 speaker. Phrases 1 and 2.
The pitch designations are explained
in Chapter 7.

This fact can be established by comparing the time spent in pause to the time spent in speaking: (English version)

	Average Total Pause Time	Average Total Speaking Time	Average Total Elapsed Time
E1:	18 sec.	63 sec.	81 sec.
E2:	20 sec.	77 sec.	97 sec.
E3:	8 sec.	73 sec.	80 sec.

The English text contains 290 syllables. Therefore, the E1 speakers were speaking at the rate of 4.6 syllables per sec., the E2 speakers at the rate of 3.8 syllables per sec., and the E3 speakers at the rate of 4.0 syllables per second. Thus, both E2 and E3 speakers were speaking more slowly than E1 speakers. Yet only the E2 speakers appeared to be doing so. The impression of extreme rapidity on the part of E3 speakers but not E2 speakers can be accounted for only by the difference in pause length and frequency. Independent investigation corroborates this close relationship between the impression of speed by the hearer and the lack of pause by the speaker (Goldman-Eisler 1961).

In the Spanish version, the figures are surprisingly similar. In total number of pauses, E3 speakers made fewer than the others:

	English version	Spanish version
S1/E1:	27 pauses	26 pauses
S1/E2:	27 "	27 "
S1/E3:	20 "	18 "

Average total number of pauses (E1/S3 speaker not counted).

A comparison of pause lengths shows a similar noticeable division between bilingual speaker classifications:

(Spanish version)

	Most Frequent Pause Length	Total Pause Time	Total Speaking Time	Total Elapsed Time
S1/E1:	.5 sec.	18 sec.	63 sec.	81 sec.
S1/E2	.5 sec.	17 sec.	66 sec.	83 sec.
S1/E3	.3 sec.	8 sec.	75 sec.	83 sec.

Here again, as in the English version, E3 speakers spent less than half the time on pause compared to E1 and E2 speakers, despite the fact that all are native S1 speakers.

How can this discrepancy in pause structuring among native speakers in their common native language be explained? If we take as the norm for Puerto Rican Spanish the S1/E3 speaker (= native fluency in Spanish, heavy interference in English), then it must be concluded that the other S1 speakers showed the influence of English pause patterns when speaking Spanish. In view of their greater exposure to English in their life histories, this is a possible explanation. It is somewhat puzzling, however, that the carryover in one direction--Spanish to English--renders speech less intelligible, while carryover in the opposite direction--English to Spanish--does not.

The reasons for the lack of clearly defined boundary markers in the speech of S1/E3 speakers are not certain, and warrant further investigation. In the literature on Spanish phonology, it is not mentioned as being characteristic of the language in general. In conversation, it is not particularly noticeable.[14] There seems to be no apparent connection with methods of teaching reading in Puerto Rico public schools. If lack of pause structuring is a characteristic of a special declamatory or reading style restricted to island Spanish, the speakers themselves were unaware of it.

Whatever the source of this characteristic of Puerto Rican Spanish, its presence as interference is unmistakeable in language classes. If a student is asked to group the words of a long English sentence into phrases and make appropriate junctures, he exhibits discomfort, and finds it difficult even to mimic the teacher. He feels that to stop speaking before the end of a sentence, unless directed by punctuation marks, is grammatically and semantically wrong, as well as a mark of disfluency.

6. INTERFERENCE IN ACCENTUAL PATTERNS

There are two basic and closely related differences in the structures of English and Spanish which give rise to interference in accentual patterns. The first concerns rhythmic units; the second concerns ways of signalling emphasis.

Rhythm is an essential component of melody. In both speech melody and musical melody, pitch moves through regulated time. In music, time is regulated by the requirements of balance, symmetry, variety, and continuity, and the words, if any, are subordinate to the design. In speech, on the other hand, the words quite literally "call the tune," and the melody must fit the message carried by them.

Speech rhythm is a patterned alternation of accents and non-accents interrupted by pauses which group together semantically related constructions, i.e., intonation units (Juncture without pause also performs this grouping function, but does not interrupt speech rhythm). Underlying this rhythm are two units of measurement which serve as time references and are analogous to the time signature at the beginning of a piece of music. In music, they are specified anew for each composition; in speech, they are [illegible] specified by the phonological structure of the language, and are constant throughout all utterances of the language.

The first measurement is the unit of length (e.g., a quarter-note is worth one beat, a half-note two beats, a whole note four beats, etc.). The linguistic unit of length may be a syllable, a word, or a phrase. The second measurement is the unit of prominence (e.g., each measure has one strong beat). The linguistic unit of prominence may also be a syllable, a word, or a phrase.

In Spanish, the unit of length is the syllable. A word containing four syllables will take about twice as long to pronounce as a word of two syllables, and there will be no appreciable length difference between stressed and unstressed syllables.[15] (Fig. 6). A syllable cannot be the unit of length in English because there are several different phonetic syllable lengths conditioned by stress and and environment: stressed syllables are longer than unstressed, before voiced consonants they are longer than before voiceless, etc.

The unit of prominence in Spanish is the phonological word. Included as part of the phonological word are such unstressable enclitics and proclitics as articles, pronoun objects, and some relative pronouns. Each phonological word receives one strong stress.[16]

Since the time value of syllables remains constant, and since words vary in the number of syllables they contain, the stress rhythm is unevenly spaced: (Fig. 6)

| • • | • • | • | • | • | • | | •

CUAN do Juan BO- bo ten- Í- a O- cho AÑ- os E- ra MUY BO-bo.

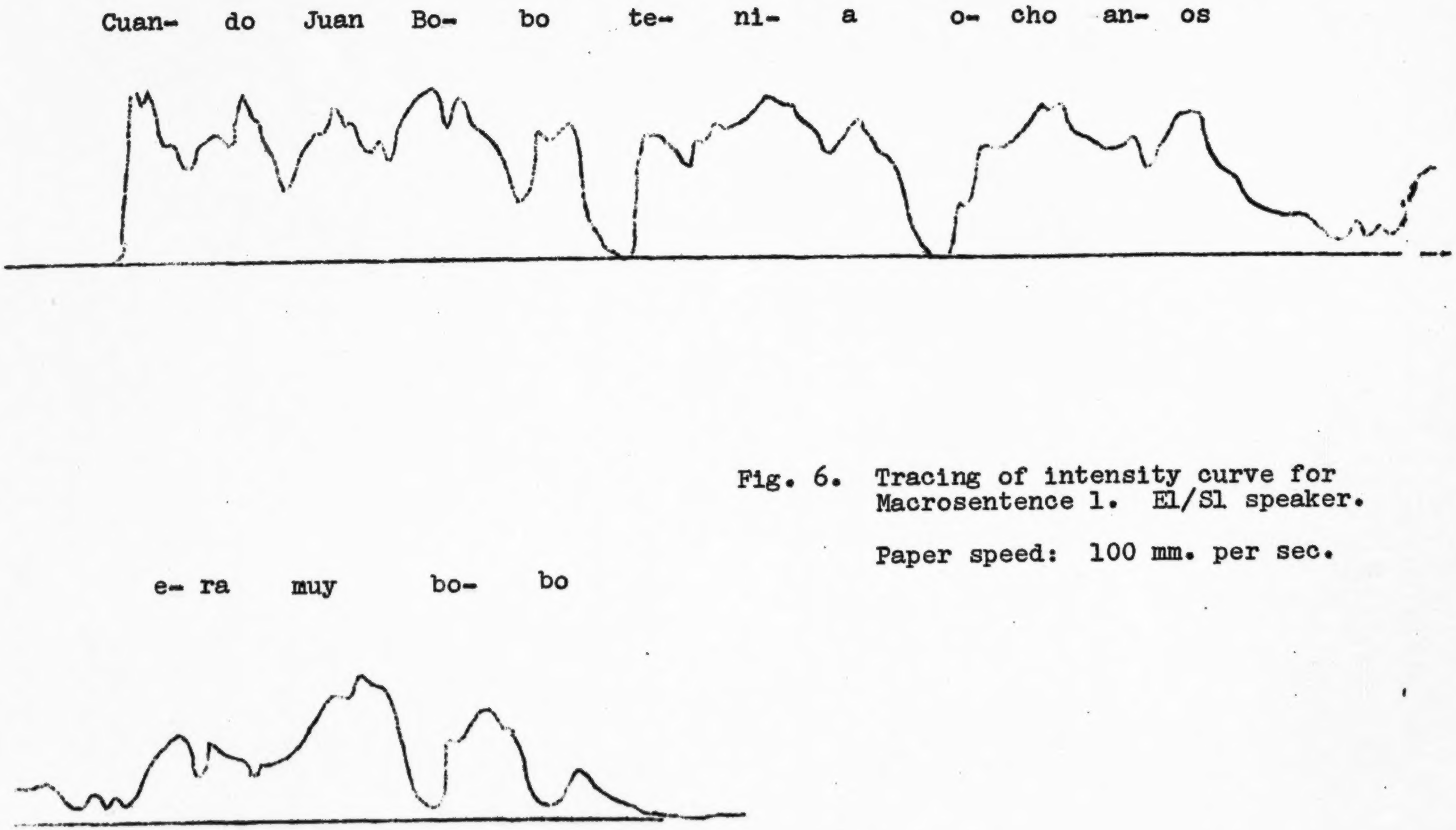


Fig. 6. Tracing of intensity curve for Macrosentence 1. El/Sl speaker.

Paper speed: 100 mm. per sec.

In English, the unit for both length and prominence is the phonological phrase. Phrases tend to be of equal time value, regardless of the number of syllables in each, so that some syllables are stretched or squeezed to fit. Each phrase contains one strong beat (=primary stress), and the stress rhythm of successive phrases is evenly spaced:(Fig. 7):

When JUAN Bobo
was EIGHT years old
he was very STUpid.

Notice that although this English sentence contains more graphic words than the corresponding Spanish sentence (11 to 8), there are only three strong stresses compared to eight strong stresses in the Spanish sentence.[17] This syllable - to - stress proportion is one of the chief prosodic differences between the two languages, as may be seen by comparing statistics for the two versions of the text:

	Graphic words	Syllables	Syllables per word	Strong stresses	Syllables per stress	Words per stress
Spanish	176	379	2.12	120	3.24	1.4
English	240	290	1.20	69	4.20	3.8

English words are shorter, it takes more of them to carry the message, and fewer syllables are stressed; almost two out of every three Spanish words receive stress, so that despite the fact that there are fewer Spanish words in the text, there are many more strong stresses. When an E3 speaker carries over his native Spanish stress patterns into English, he stresses every word which would receive stress in Spanish:

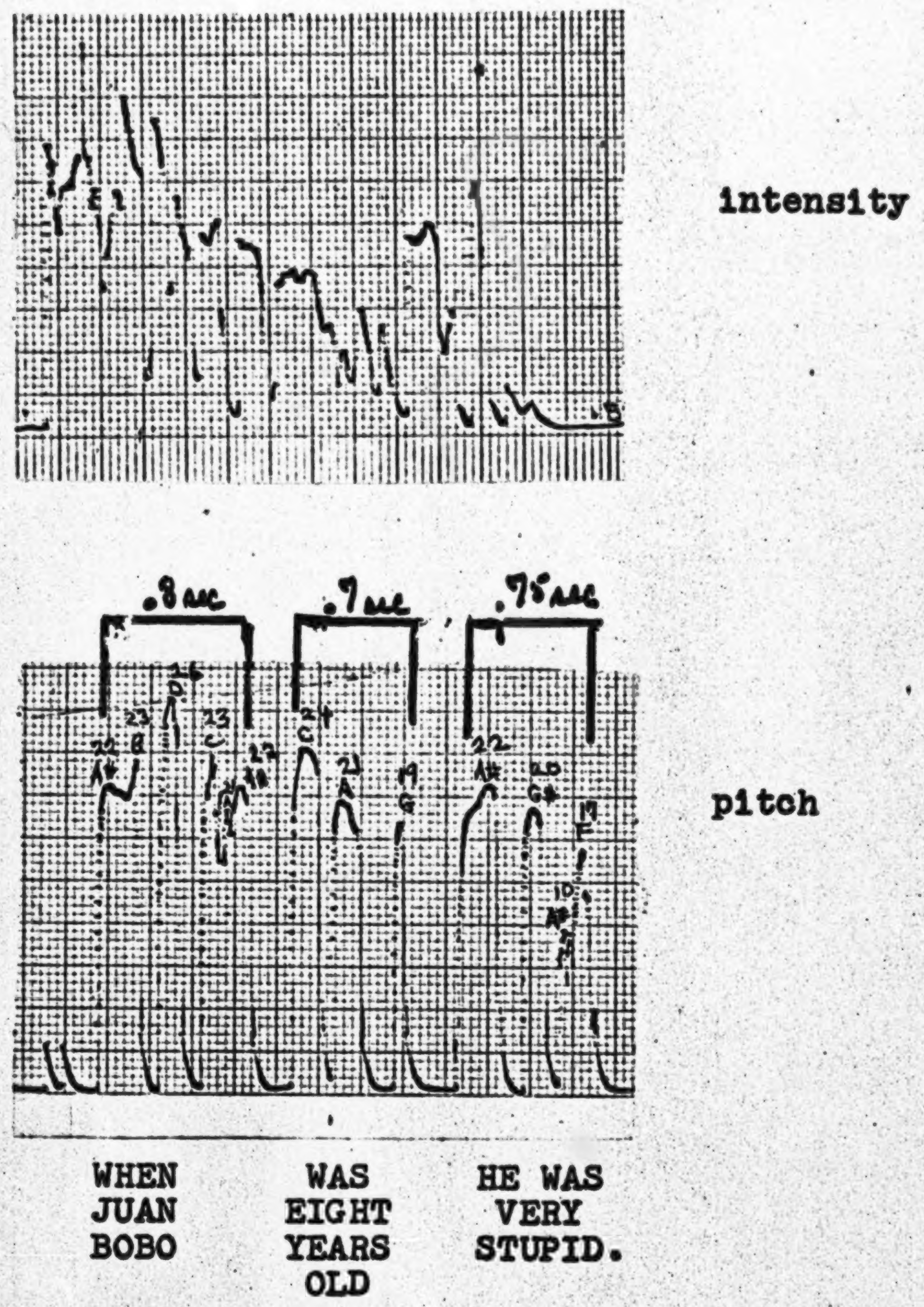


Fig. 7. S1/E1 speaker.
Clause 1.
Paper Speed: 20 mm. per sec.

(S1/E3 speaker)

CUANdo Juan BO bo tenÍa Ocho AÑos ERa MUY BObo.

WHEN Juan BObo WAS EIGHT YEARS OLD he WAS VEry STUpid.

The E1/S3 speaker, on the other hand, transferring the English phrase-stress pattern into Spanish, fails to make the word stresses with sufficient intensity:

(E1/S3 speaker)

When JUAN Bobo was EIGHT years old he was very STUpid.

Cuando JUAN Bobo tenia Ocho anos era muy BObo.

If the S3 speaker is asked to pronounce the Spanish words clearly and without the vowel reduction characteristic of English unstressed syllables, he will put an open juncture between every pair of stresses, so that the sentence sounds like a succession of several phrases:

(E1/S1 speaker)

CUANdo / JUAN Bobo / teNÍa / ocho ANos / ERa / muy BObo.

In cases of unequal word correspondence, i.e., one Spanish word to two or more English words, E3 and S3 speakers made morpheme-to morpheme stress transfers:

(Debí = I should have)

	normal pattern		interference pattern
E1:	I SHOULD have tied it to a STRING.	E3:	*I should HAVE TIED it to a STRING.
S1:	DeBÍ amarRARlo con un corDOŃ.	S3:	*DEbí amarrarlo con un corDÓN.

Neither of the interference patterns is permissible, and are, strictly speaking, ungrammatical.

E3 and S3 speakers also attempted to maintain the same number of strong stresses in corresponding constructions:

		number of stresses
(que tenía = which he had)		
S1/E3:	DeciDIÓ regaLARle un CERdo que teNÍa. He deCIDed to GIVE her a PIG which he HAD.	4
E1/S3:	He deCIDed to give her a PIG which he had. DeciDIÓ regalarle un CERdo que tenía.	2
(empezó = began)		
S1/E3:	El CERdo empeZÓ a chiLLAR y pateAR. The PIG beGAN to SCREAM and KICK.	4
E1/S3:	The PIG began to SCREAM and KICK. El CERdo empezó a chiLLAR y pateAR.	3
(estaba destrozado = was ruined)		
S1/E3:	¡El reLOJ esTAba destroZAdo! The CLOCK WAS RUINED!	3
E1/S3:	The CLOCK was RUINED! ¡El REloj estaba destroZAdo!	2

The effect of both kinds of accentual interference is badly disjointed speech, lacking continuity and hard to follow. The native Spanish listener misses the even spacing of clearly pronounced syllables and the balanced stressing of successive phonological words. The native English listener misses the even spacing of primary stresses and the lack of grouping into successive phrases. It is the fact of distortion, rather than the form, which the hearer finds disturbing.

A more serious problem for intelligibility arises when, as a result of interference in accentual patterns, the meaning is distorted, and incorrect identification takes place.

English uses intonational devices to signal emphasis to a much greater extent than Spanish. Many emphatic utterances in English can be expressed by a shift of accent alone, where Spanish would require a change in construction:

That man doesn't have any money.	Ese señor no tiene dinero.
That man doesn't have ANY money.	Ese señor no tiene ningún dinero.
I have some friends	Yo tengo varios amigos.
I have SOME friends.	Yo tengo algunos amigos.
Have you done any work this week?	¿Has hecho algo de trabajo en esta semana?
Have you done ANY work this week?	¿Has hecho algún trabajo en esta semana?

E3 speakers will fail to give the emphasis necessary to make the distinction. S3 speakers will pronounce the distinguishing word with more intensity than necessary, so that the Spanish utterance sounds emotionally charged.

Changes of meaning in tag questions, which in English are signalled only by a reversal of the direction of pitch accent, must also be rendered by different constructions in Spanish, while the pitch inflection remains constant:

The girls LIKE him, DON'T they? ↗	El le gusta a las muchachas, ¿verdad que si? ↗
The girls LIKE him, DON'T they? ↘	El le gusta a las muchachas, ¿no es verdad? ↗

A frequent source of accentual interference from Spanish in which too *much* emphasis is given occurs when contrastive stress is unintentionally signalled in pronoun constructions. According to Spanish stress rules, direct and indirect object pronouns are not stressed immediately preceding or immediately following the verb:

Lo SAbe.	He knows it.	(lo = it)
Quiero conoCERla.	I want to meet her.	(la = her)
TRÁEmelo.	Bring it to me.	(melo = to me, it)

Pronouns are stressed as subjects, and in indirect object prepositional phrases added for clarification. This is particularly necessary if the indirect object is *le*, which may mean *her*, *him*, or *you*:

Le DÍ el LIbro a *ÉL*.	I gave the book to him.
Le DÍ el LIbro a *ELla*.	I gave the book to her.
Le DÍ el LIbro a *uSTED*.	I gave the book to you.

In the English equivalents, position of the indirect object alone does not make it emphatic:

I gave the book to him = I gave him the book.

Only voice modification can signal contrastive emphasis in English, and contrastive emphasis may be placed on ANY stressable word:

I gave the book to *HIM*. (not to HER)
I gave *HIM* the book. (not HER)

I gave the *BOOK* to him. (not the NEWSPAPER)
I gave him the *BOOK*. "

I *GAVE* the book to him. (not LENT)
I *GAVE* him the book. "

I gave the book to him. (not SHE)
I gave him the book. "

Such contrasts are possible in English because of what Stockwell calls "optional choice for the center of an intonation contour." To express the same degree of contrast in Spanish, the parallel items would have to be specified:

I gave the book to HIM. (not to someone else)

Le dí el libro a ÉL, no a ELLA. (no a USTED, no a PABLO, etc

Because the pronoun is obligatorily stressed after the preposition in Spanish, the S1/E3 speaker transfers this pattern into English and similarly stresses all pronouns after prepositions, whether or not contrastive emphasis is appropriate in the utterance.

Where both English and Spanish object pronouns are in unstressed position, there is no ambiguity (although the presence of too many word stresses makes the English utterance sound strangely insistent):

(le quiso hacer = wanted to give her)

S1/E3 speaker

Juan BObo le QUIso haCER un reGAlo.

Juan BObo WANTed to GIVE her a PREsent.

However, if the English pronoun follows a preposition, it is given stress according to the Spanish stress rule even where the Spanish pronoun remains in unstressed position:

You should have tied a string to IT. (amarrarlo)

Go on an errand for ME. (hazme)

The teacher waited and waited for HIM. (lo esperaba)

Juan Bobo began to say to HIMSELF: (a decirse)

After a long time she caught sight of HIM. (verlo)

It could not get away from ME. (se me ha podido)

The effect of this kind of accentual interference is quite fatiguing to the hearer. The speaker's utterances seem to be full of additional meanings that the hearer cannot identify. Each time the post-prepositional pronoun is stressed, the hearer asks himself "Who else?" or "What else?" is the other member of the contrast.

7. INTERFERENCE IN PITCH PATTERNS

The meanings associated with particular pitch contours in English and Spanish are described in Stockwell 1965 and Cardenas 1960. This discussion will therefore be confined to the broader formal aspects of pitch interference.

The pitch designations shown on the stripchart examples which follow require some explanation. The numbers which accompany each musical pitch name refer to the number of semitones above a voice cutoff line of 66 cps. They were assigned to the pitch peaks on the basis of a conversion of cps measurements into musical pitches, which were then numbered sequentially from the lowest to the highest. This was found to be more convenient than retaining the cps numbers or using musical pitch designations alone. In this way musical intervals may be described without the need for musical notation or technical harmonic terminology. A difference of one digit = a semitone; a difference of two digits = two semitones, etc. The data gathered in this way will be utilized in a future study of the similarities between speech melody and Puerto Rican folkmusic. It should be understood that pitch differences in speech, just as in music, are relative, not absolute; any sequence of pitches can be transposed to any other starting pitch and still preserve pitch relationships. Retaining the actual pitches used by the speaker is primarily as an aid to voice identification.

Comparison of the pitch curves for the various speakers revealed that S3 and E3 speakers (heavy interference) transferred the pitch patterns of their native languages with very little modification, or with the minimum of modification demanded by the form of the construction in the second language. They transferred the range of stressed pitches, the distribution of pitches and characteristic intervals. S1/E1 speakers on the other hand (native fluency in both languages) showed markedly different configurations in their Spanish and English versions, so that it was possible to identify the language being spoken by the graphic stripchart representation alone. A description of the pitch characteristics which this group of speakers exhibited in each language will, therefore, provide a reference for later examples of interference.

Pitch range. Overall pitch range was the same for both Spanish and English. The range of stressed pitches, however, was narrower in Spanish. On the topmost level of prominence, the accent pitches, the span averaged 8 semitones in English and 5 semitones in Spanish (Fig. 8).

Pitch distribution: The tonic pitch, i.e., the pitch level to which the speaker returns most often, is approximately 2 semitones higher in Spanish (Fig. 8). This pitch is used more frequently in Spanish than the corresponding pitch in English. Departures from the tonic pitch line in English may be abrupt,

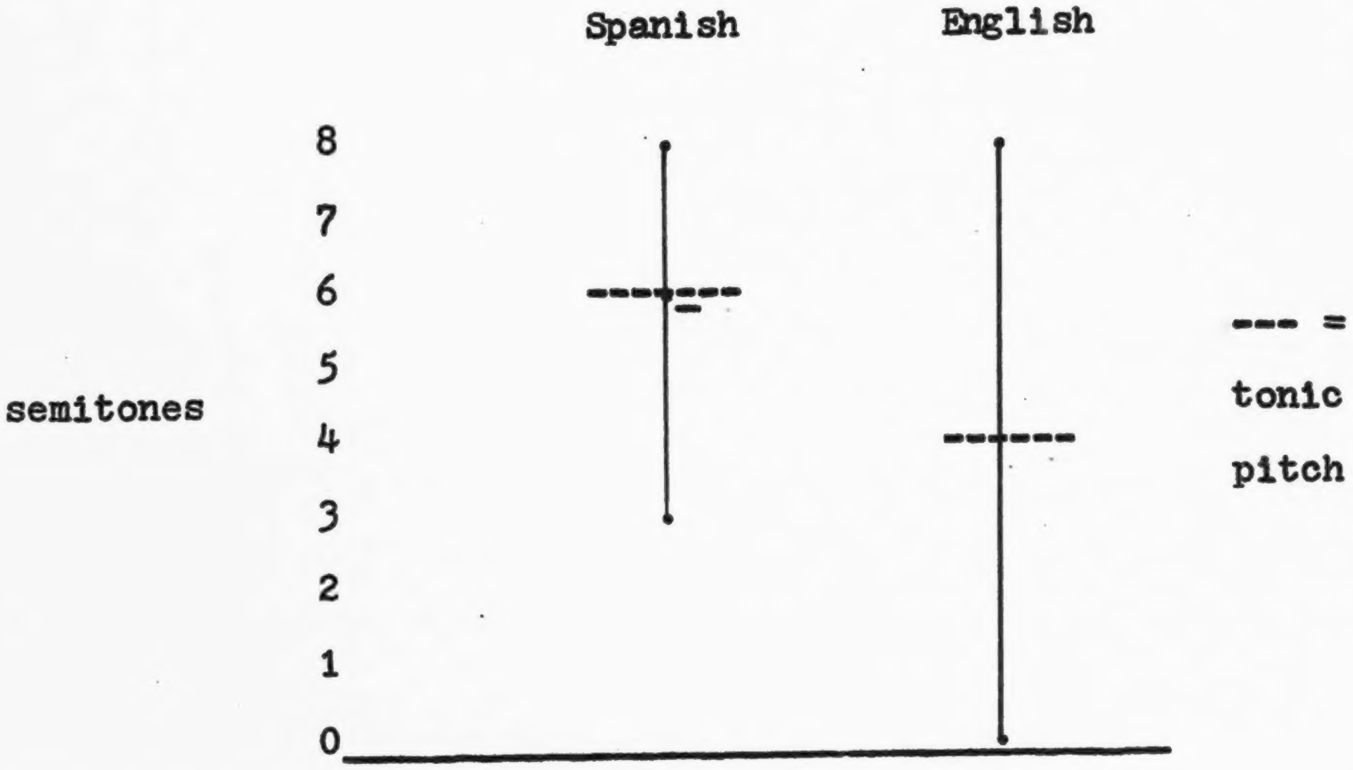


Fig. 8. Stressed pitch range and tonic pitch line

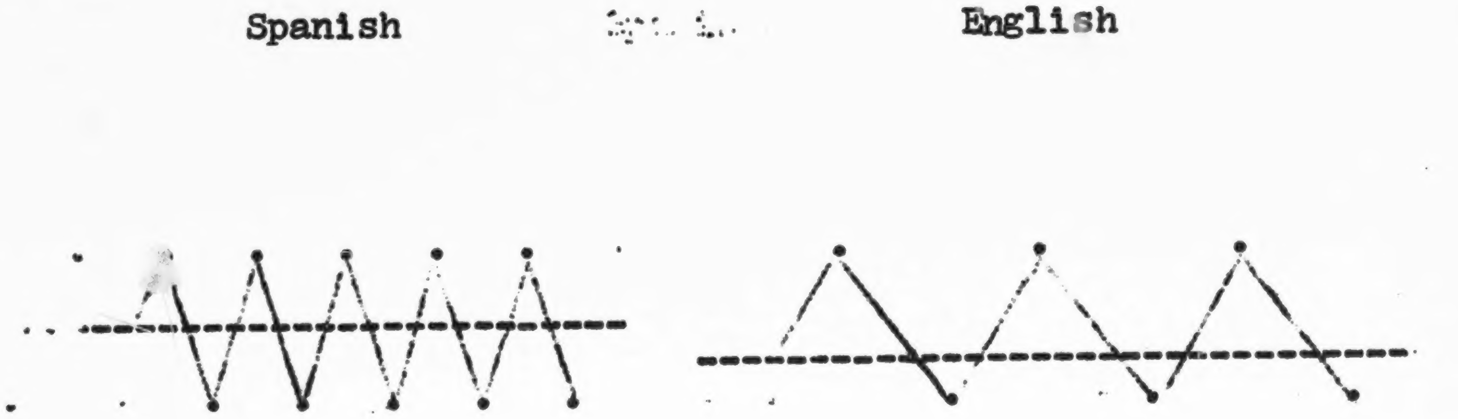
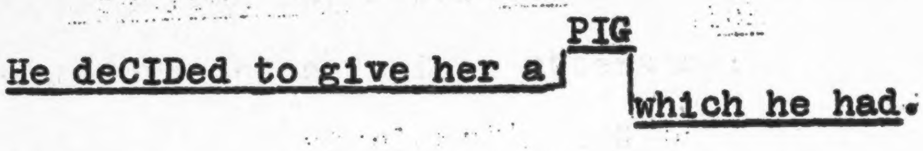

Spanish
English

Fig. 9. Movement around the tonic pitch line.

with jumps of several semitones, whereas in Spanish the movement away from the tonic pitch line is more gradual (Fig. 9). This is due in large part to the difference in accentual patterns described earlier. English, which is phrase-centered, takes wide swings around the tonic pitch line, while Spanish, which is word-stress centered, does not permit such flexible movement.

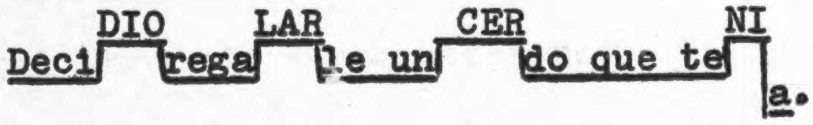
As a result, the points of prominence in English are fewer and sharper, while in Spanish there is more of a staccato effect.

In English there is a closer tie between stress and pitch than in Spanish. The primary stress in English is always accompanied by a sharp jump in pitch (usually a rise, but not always). In Spanish strong stress is frequently signalled by an increase in intensity without any significant pitch movement. The accentual patterns of English may result in a sharp drop in pitch several syllables before the end of an utterance:



(E1)

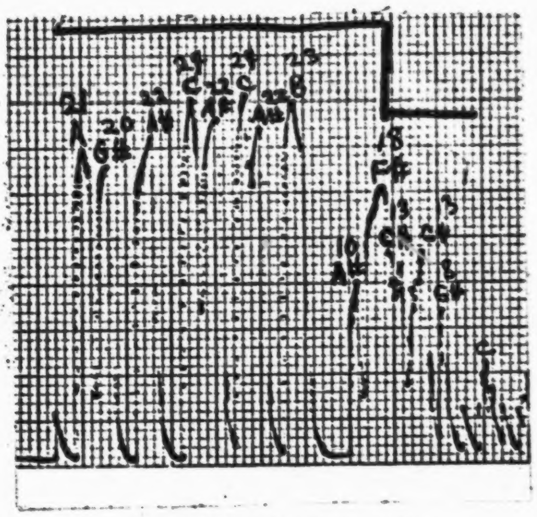
Spanish accentual patterns, however, keep the pitch line high until the end of the utterance:



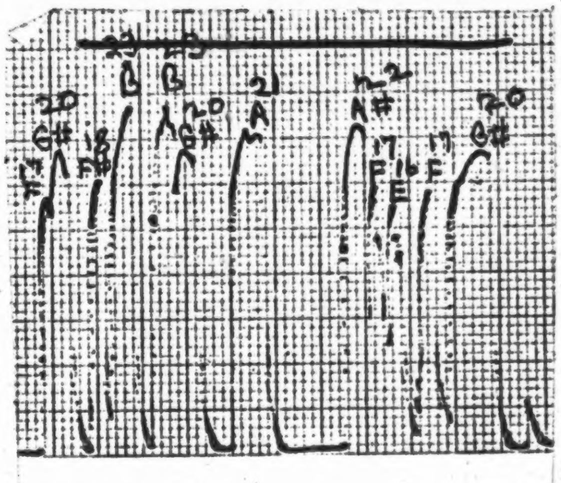
(S1)

(See Fig. 10).

Pitch motifs: Between larger intonation units (Oral Paragraphs and Macrosentences), there was no difference between languages in choice of pitch motifs. The speaker's interpretation of the story determined the semantic relationship between units. For example, one speaker emphasized the Main Action, and another



He decided to give
her a pig which he had.



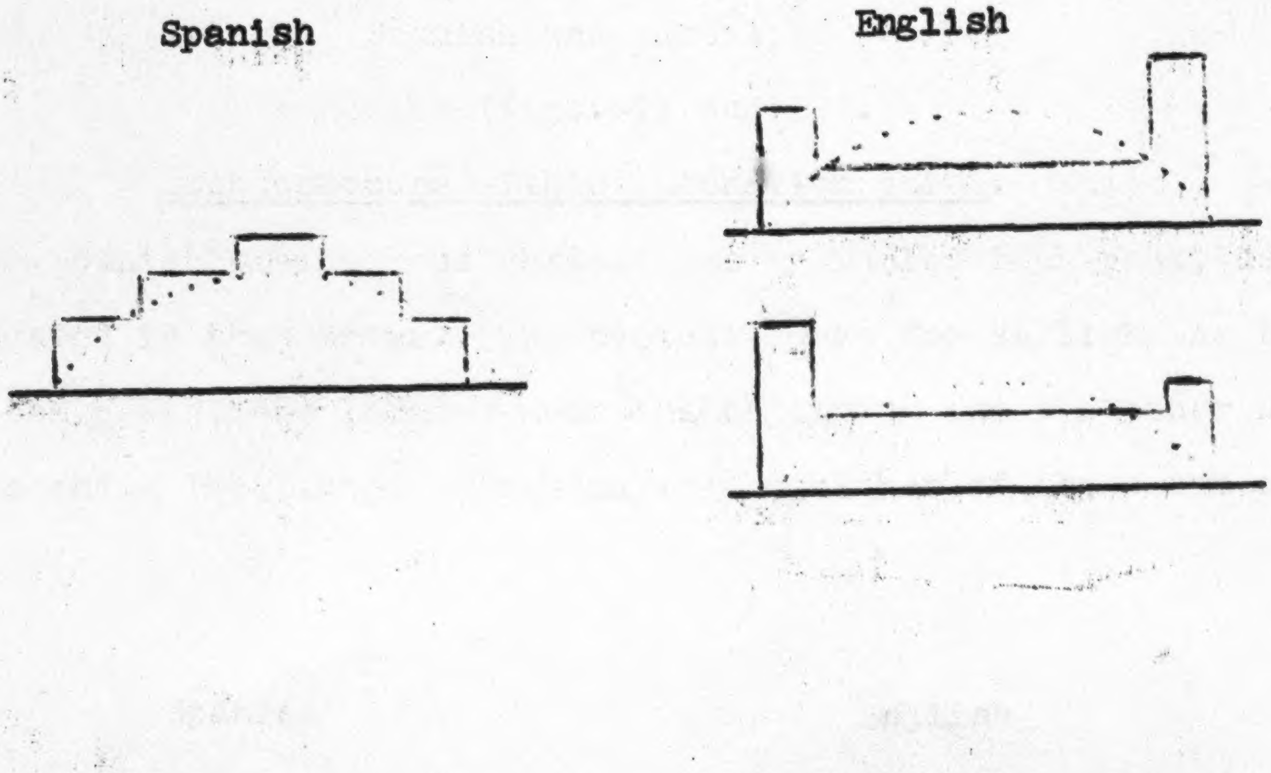
Decidió regalarle
un cerdo que tenía.

Fig. 10. S1/E1 speaker.

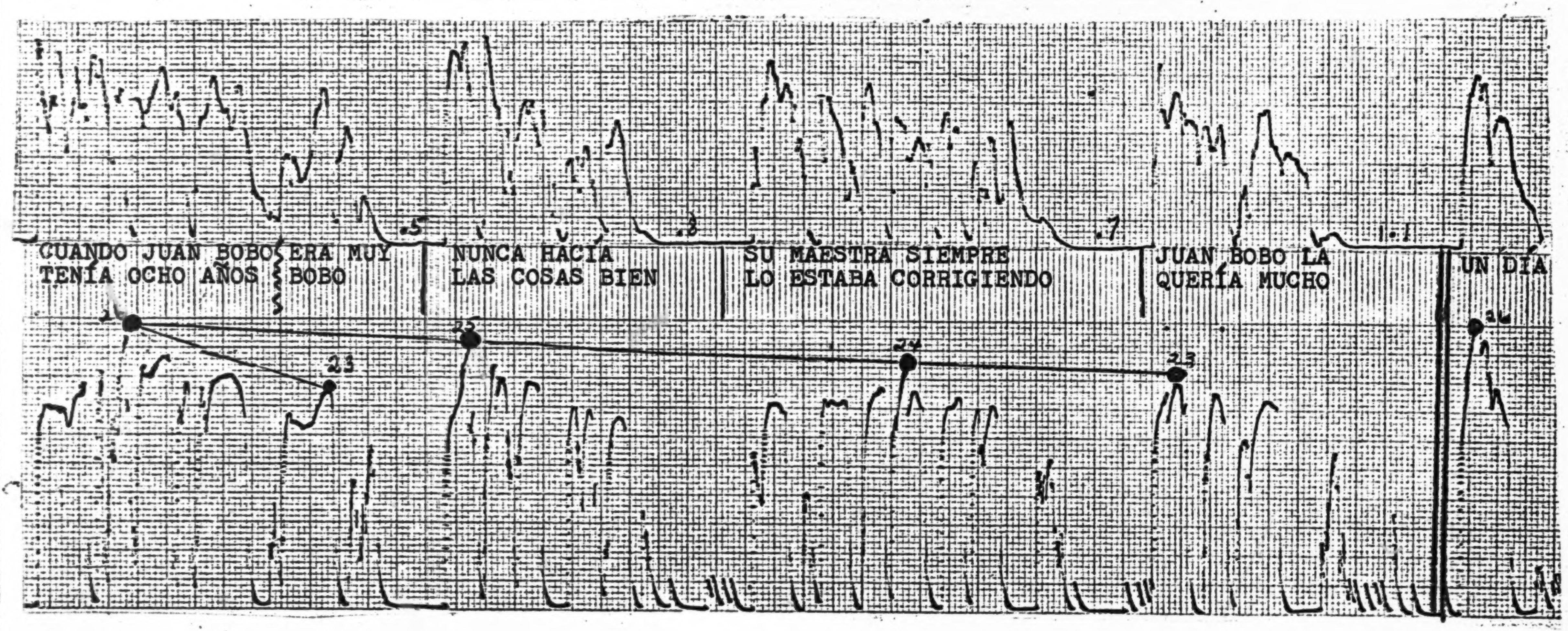
gave it Equal Weight with the Setting. Macrosentences, too, were related by various pitch motifs. Nor was there any observable tendency to transfer pitch motifs into the other language for the corresponding intonation units. The speakers apparently preferred to make different interpretations each time they played the role of story-teller.[18]

Between smaller intonation units, however (Clauses and Phrases), there were definite preferences for certain pitch motifs tied to the language used. The English versions had more Emphasis Motifs than the Spanish; the Spanish versions had more Equal Weight motifs than the English. In a sequence of several intonation units, Spanish was more likely to repeat a succession of Presentation Motifs (Figs. 11 and 12).

Pitch contours within intonation units. The typical curve for Spanish Clauses and Phrases has a single pitch peak, usually located in the center. The typical curve for English has two pitch peaks, one located near the beginning and the other near the end. The highest pitch may be on either of these two peaks.



26-26
Equal weight motif



MS 1

(MS 2--)

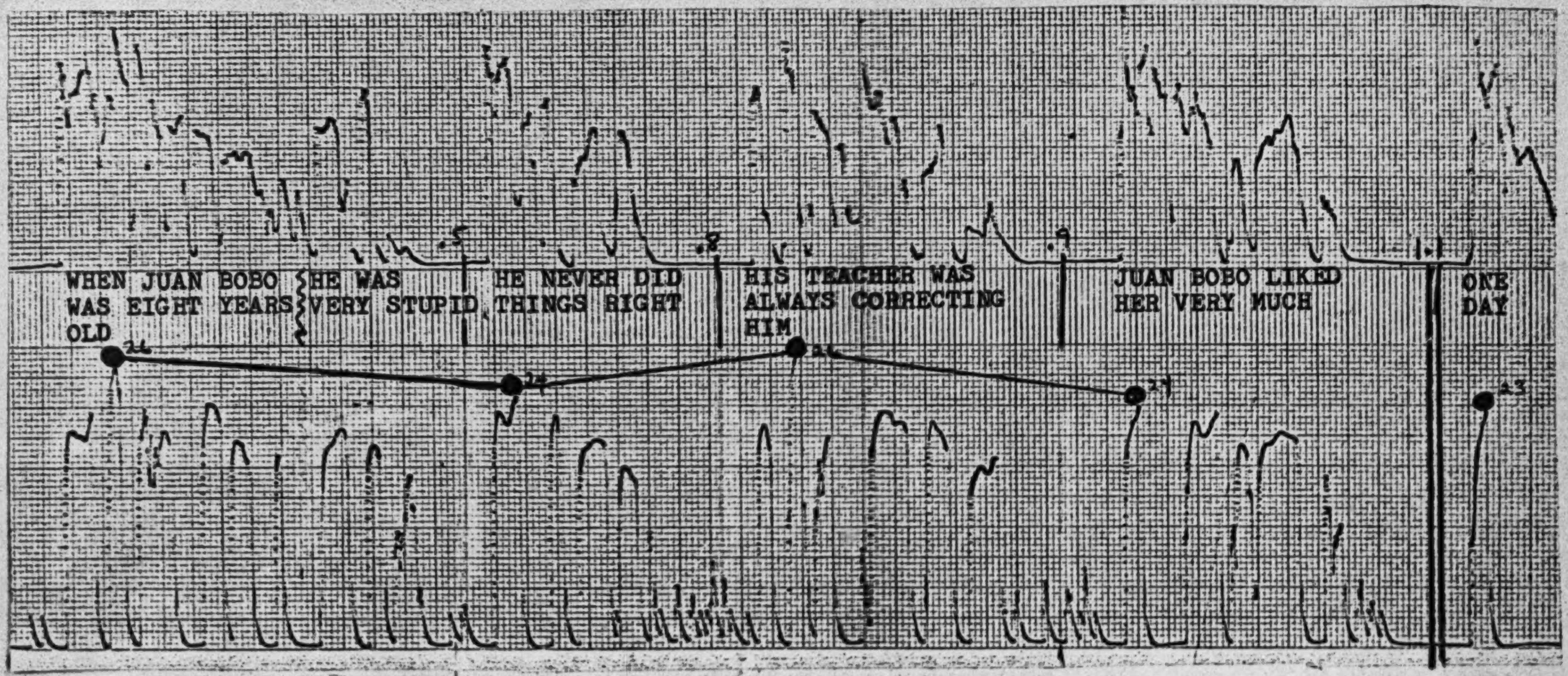
26-25
Presentation Motif
26-23
Presentation Motif

25-24
Presentation Motif

24-23
Presentation Motif

Fig. 11. Macrosentence 1. S1/E1 speaker.

26-23
Presentation Motif



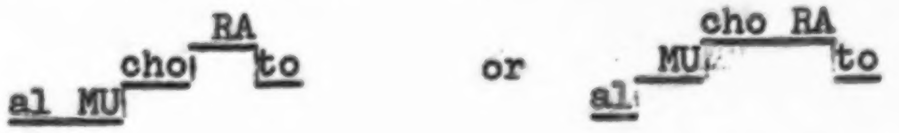
26-24
Presentation Motif

24-26
Emphasis Motif

26-24
Presentation Motif

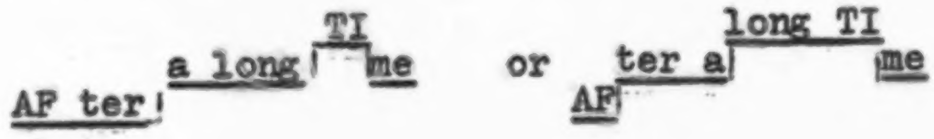
Fig. 12. Macrosentence 1. S1/E1 speaker.

In Spanish, the pitch peak is approached gradually, either by a stepwise progression or by anticipation of the peak pitch:


al MU cho RA to
or
al MU cho RA to

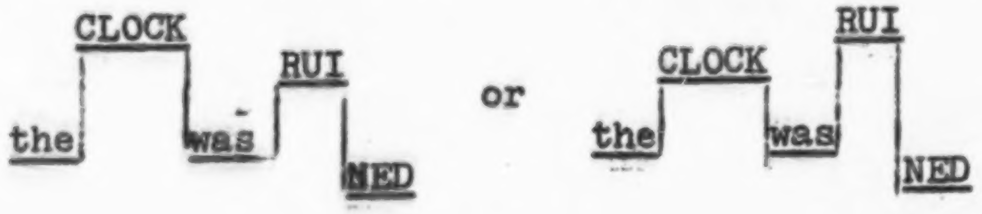
(S1)

If this pitch movement is transferred into English, it produces a sing-song effect:


AF ter a long TI me
or
AF ter a long TI me

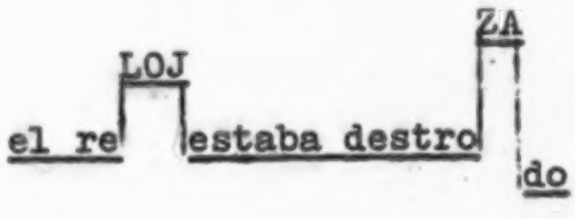
(E3)

In English, the pitch peaks (particularly the higher one, which is under primary stress) are approached by a jump in pitch:


the CLOCK was RUI NED
or
the CLOCK was RUI NED

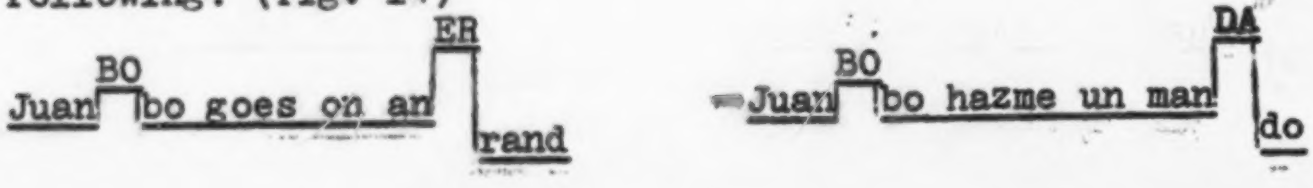
(E1)

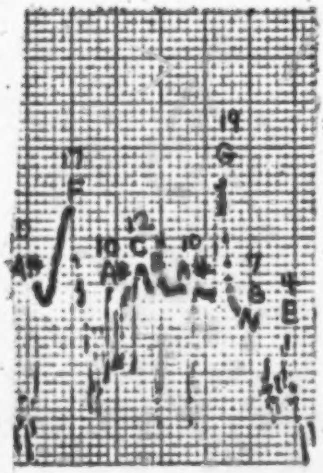
If these pitch movements are transferred into Spanish, they will produce an agitated effect. If the highest pitch peak is put near the end of the contour, the speaker sounds almost hysterical:


el re LOJ estaba destro ZA do

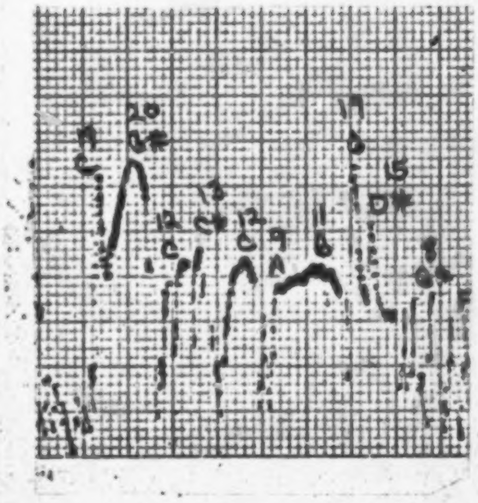
(S3)

Another example of English-to-Spanish interference is the following: (Fig. 14)


Juan BO bo goes on an ER rand
Juan BO bo hazme un man DA do



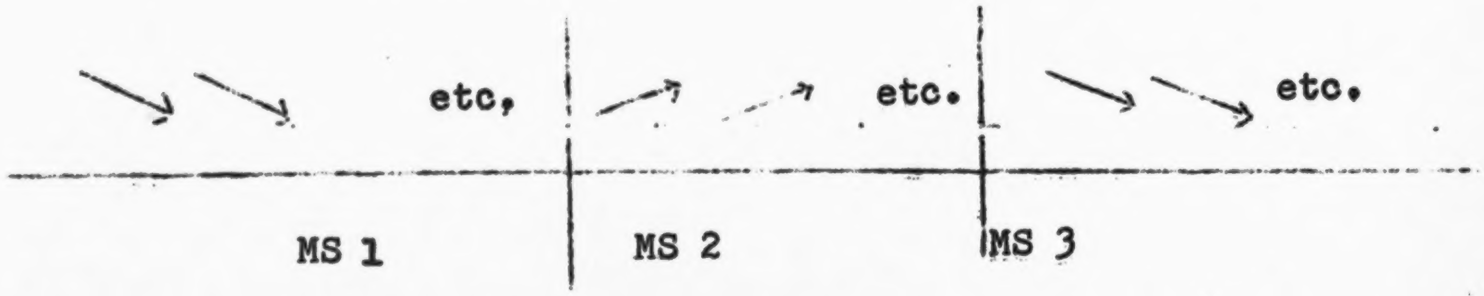
Juan Bobo goes
on an errand.



Juan Bobo hazme
un mandado.

Fig. 14. Title. El/S3 speaker.

An interesting exploitation of the double pitch-peak in English is variety in sets of intonation units. For example, all the clauses of the first Macrosentence will have the higher pitch peak at the beginning, and the higher pitch peak will be shifted to the end for all the Clauses of the second Macrosentence, returning again to the original pattern in the third Macrosentence:



The change in pitch contours supports the organization of the text made by intonational boundary markers, and signals the presence of new information. This contrastive device has its counterpart in music (Theme 1, Theme 2, etc.).

Figs. 15 through 19 show Macrosentence 1 of the text as spoken by a speaker in each bilingual classification.

8. OBSERVATIONS

The difficulties faced by the Puerto Rican college student in learning acceptable English pronunciation are the result of a poorly prepared teachers, inadequate and unsuitable teaching materials, and an outmoded and ineffective language teaching policy. The teaching of English, which begins in the first grade of primary schools, is done by teachers whose command of English is minimal. They are required to use materials geared to the audiolingual method, which requires a native speaker as a model. Few schools have the equipment necessary to follow this method,

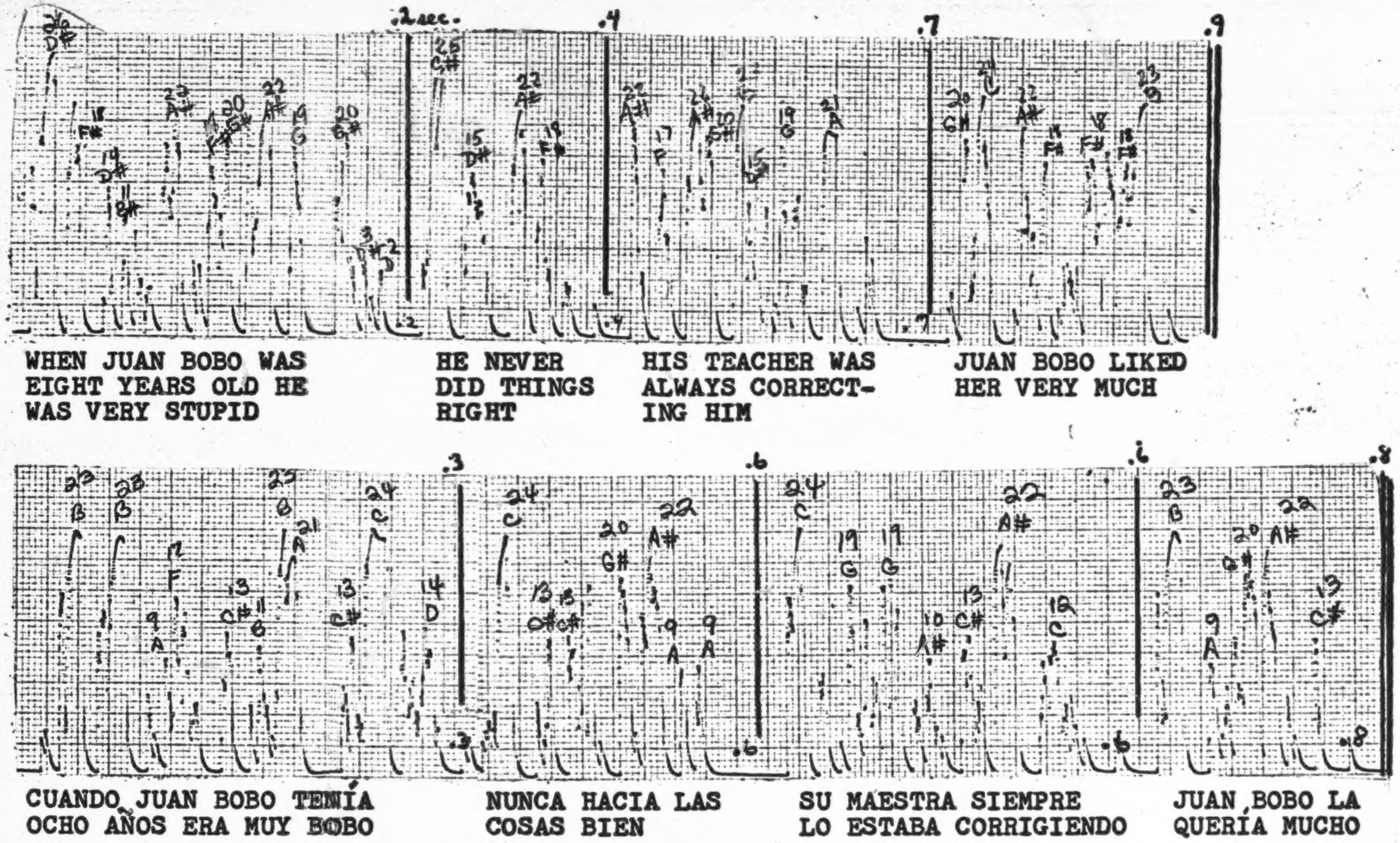


Fig. 15. S1/E1 speaker.

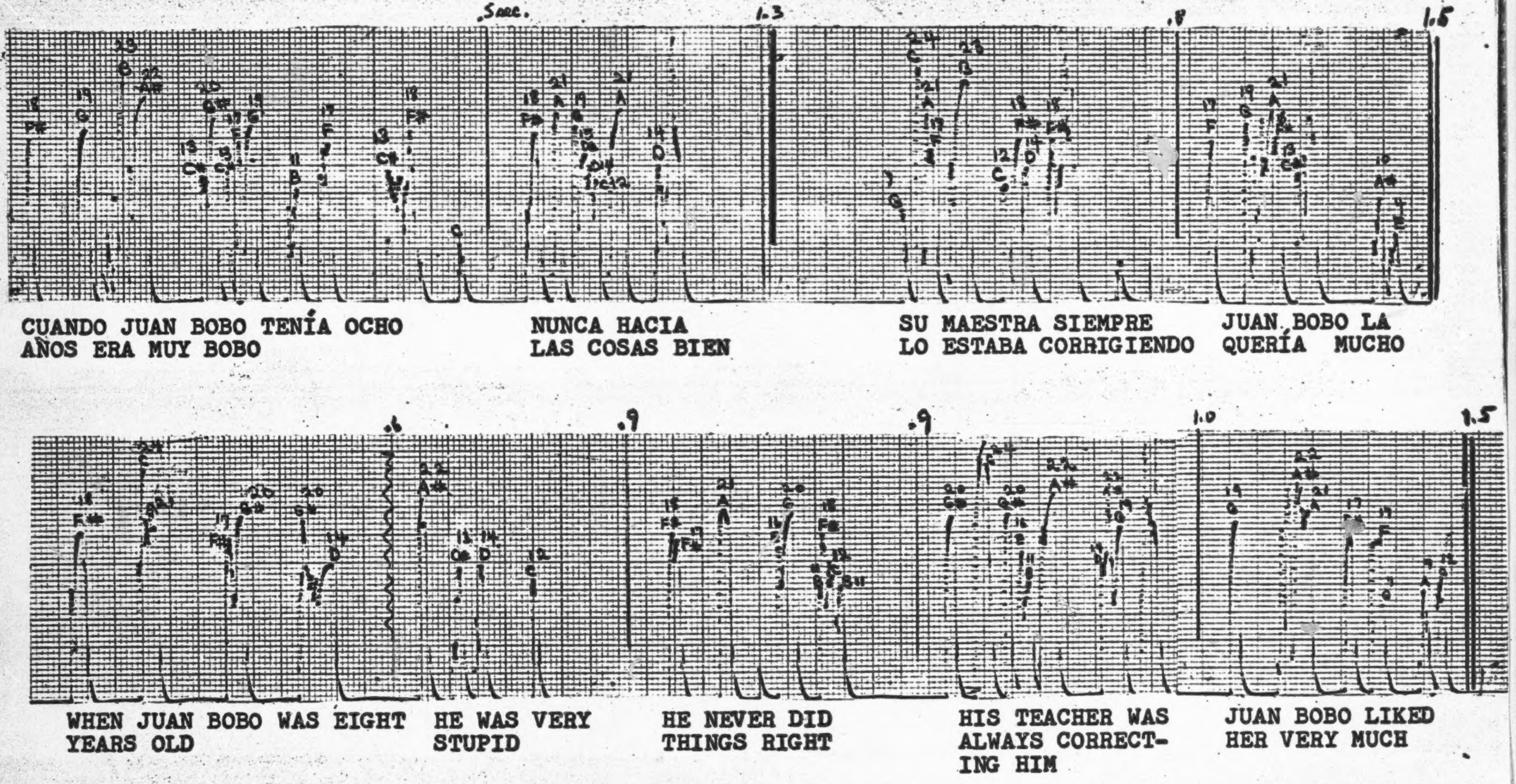
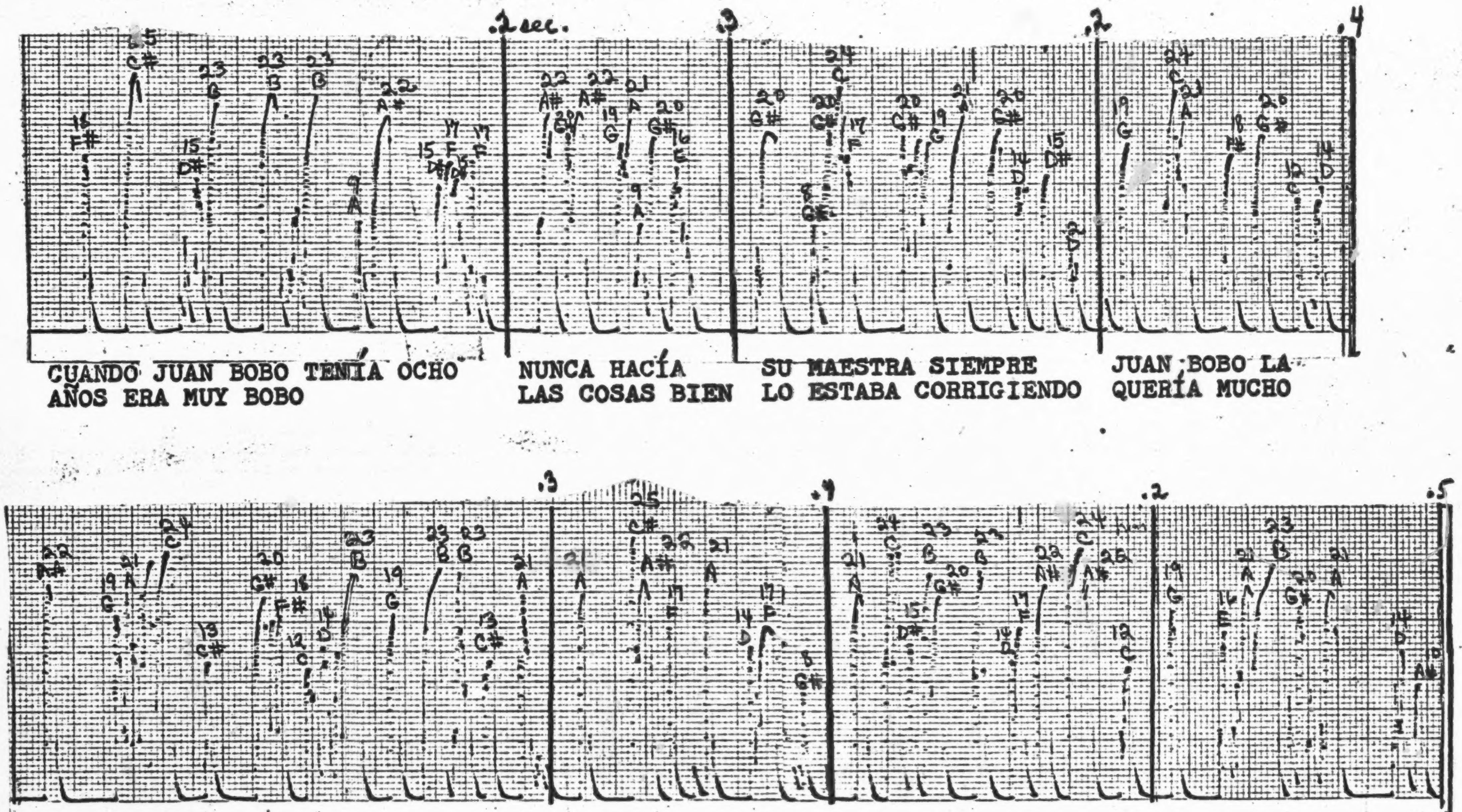


Fig. 16. S1/E2 speaker.



CUANDO JUAN BOBO TENÍA OCHO AÑOS ERA MUY BOBO

NUNCA HACÍA LAS COSAS BIEN

SU MAESTRA SIEMPRE LO ESTABA CORRIGIENDO

JUAN BOBO LA QUERÍA MUCHO

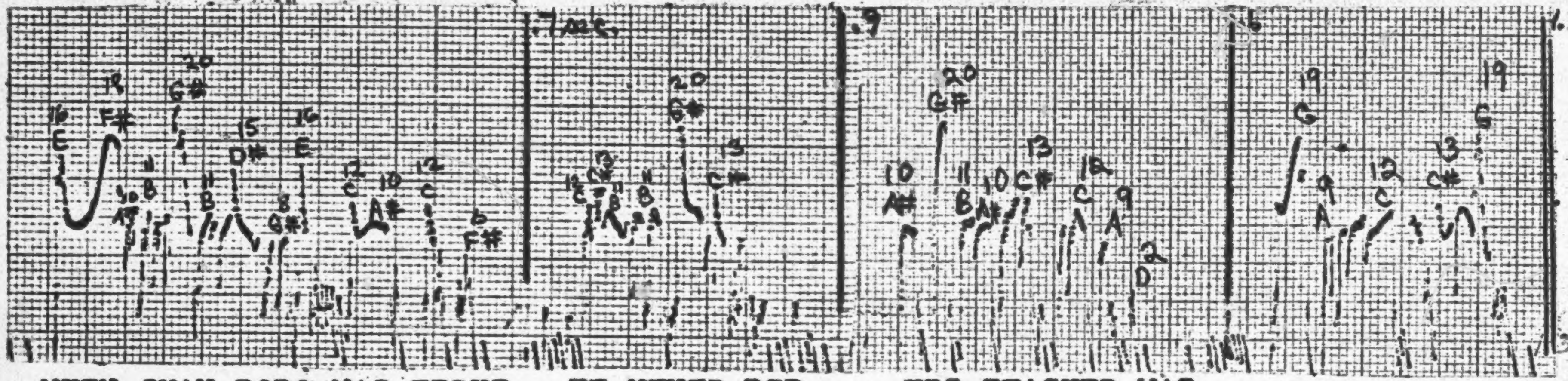
WHEN JUAN BOBO WAS EIGHT YEARS OLD HE WAS VERY STUPID

HE NEVER DID THINGS RIGHT

HIS TEACHER WAS ALWAYS CORRECTING HIM

JUAN BOBO LIKED HER VERY MUCH

Fig. 17. S1/E3 speaker.

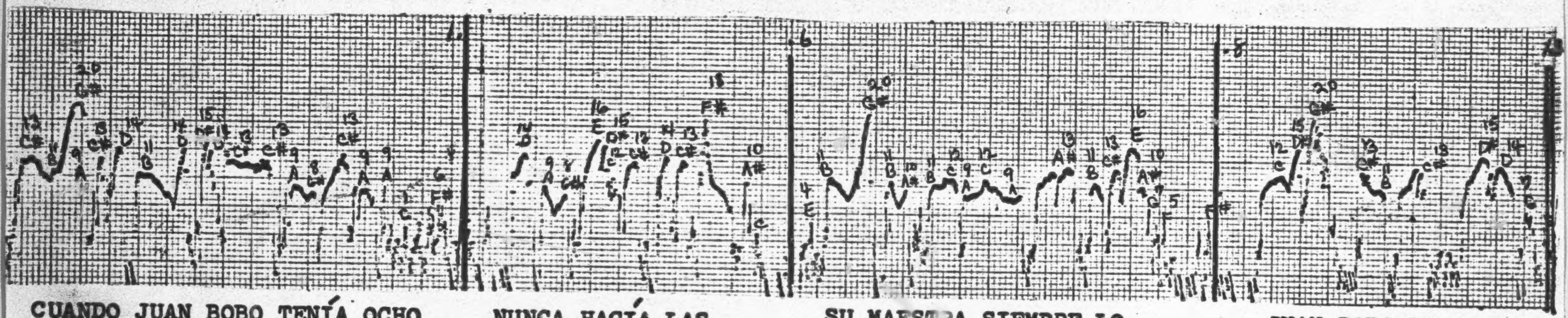


WHEN JUAN BOBO WAS EIGHT YEARS OLD HE WAS VERY STUPID

HE NEVER DID THINGS RIGHT

HIS TEACHER WAS ALWAYS CORRECTING HIM

JUAN BOBO LIKED HER VERY MUCH



CUANDO JUAN BOBO TENÍA OCHO AÑOS ERA MUY BOBO

NUNCA HACÍA LAS COSAS BIEN

SU MAESTRA SIEMPRE LO ESTABA CORRIGIENDO

JUAN BOBO LA QUERÍA MUCHO

Fig. 18. El/S3 speaker

and by the time a student reaches college and has access to authentic English models, he has developed speaking habits which are extremely difficult to eradicate. Pronunciation exercises in college textbooks of English as a second language, particularly those dealing with phrasing, stress, rhythm and intonation are presented with little or no explanation, and are not geared to problems of interference from any individual language. The vocabulary and practice material is too often highly colloquial, uninteresting to an adult, and culturally far removed from the student's experience. The English sound system is described atomistically, using complicated articulatory terminology and phonetic symbols which the student has no desire to learn. Nowhere are there any comparisons with the pronunciation of Spanish--comparisons which might help the student bridge the gap between his reading knowledge and his speaking knowledge. In the face of such mistreatment, it is not surprising that performance often falls short of the prescribed goals.

On the basis of the present study, and the insights gained from direct experience in the teaching situation, the writer is willing to offer some suggestions for improvement.

First, it must be remembered that the student who speaks with heavy interference is not aware of the mistakes in his pronunciation, nor of their effect on his intelligibility. His speaking habits are firmly entrenched by hears of reinforcement. An effective program aimed at breaking old habits and acquiring new ones therefore starts with developing awareness. The student must learn to distinguish between acceptable and unacceptable speech patterns before he can learn to discipline his speech organs to produce a desired result. For this purpose the standard discrimination exercise dealing with sound substitutions is not good enough. What is needed is not the ability to recognize the difference between two forms, neither one of which the student can pronounce correctly, but the ability to recognize the difference between the English pronunciation and the non-English pronunciation for each form. To teach sound discrimination entirely in terms of the target language, ignoring the ubiquity of interference, is refusing to face the realities of language learning situation.

Secondly, it is frustrating and demoralizing to the student to demand that he learn by parrot-like imitation alone. The student must understand _why_ he is repeatedly making those mistakes before he can discover for himself _how_ to avoid them. To accomplish this, he must know something about the workings of his own language and the mechanisms of interference. A teacher who is not equipped with this knowledge can do little more for the student than register approval when he makes correct responses and disapproval otherwise.

Thirdly, emphasis in teaching must be placed on the pronunciation problems most directly concerned with intelligibility. Too much time and energy has been wasted on the unattainable goal of perfect, accent-free speech. But to what purpose? It is most unlikely that an S1/E3 speaker will ever become an S1/E1 speaker, unless he undergoes the ordeal of Eliza Doolittle. Nor is it necessary that he does. The fluency and intelligibility of an S1/E2 speaker is fully sufficient to meet the needs of any communication situation requiring the use of English in Puerto Rico, whether it is holding a good job, doing advanced study, or even teaching English as a second language.

NOTES

1. This research was supported by a grant from the American Council of Learned Societies. The writer is indebted to Mrs. Eleanor Sebeok and Mrs. Lolinne Mohr, who lent their well-trained ears and made valuable observations; to Proffesor Maria Auffant of Inter American University, who provided the English translation and participated as an informant; and to Professor Eugene Mohr, Chairman of the Department of English and Linguistics of Inter American University, who read the final draft of the paper.

2. The impact of English on Puerto Rican Spanish vocabulary and syntax has been documented by Del Rosario 1962 and Navarro 1948. Other influences have been studied by David Lawton and are discussed in his paper "Creolization in a Dialect of Spanish: Puerto Rico," read at the Annual Meeting of the Linguistic Society of America, New York, 1968.

3. A spoken word may in some cases be incorrectly identified because of stress placement, e.g., CONduct instead of conDUCT, or HABlo instead of haBLÓ. Such cases are not, strictly speaking, phonological interference.

4. For a thorough treatment of English-to-Spanish interference, See Stockwell & Bowen 1965.

5. The terminology used here differs somewhat from that used in the Turkish study, and is open to further modification. Minimum and Maximum Pause Groups, found necessary for the analysis of long Turkish sentences, are replaced by the Clause.

6. M. A. K. Halliday uses the term "intonation unit" to denote those verbalizations which occur between pauses (quoted in Silverman 1968). This is a linear definition, and does not apply here. In the present theoretical framework, intonation units are hierarchically structured, and may contain other intonation units. Furthermore, they are not necessarily followed by silence.

7. Húltzen 1955 emphasizes that the analysis of intonation must be based on several speakers. If only one is used, there is no way to separate ideolectal speech characteristics from features of the language structure. This is the chief handicap to the analysis of free conversation.

8. See Nash 1967, Chapter 6, for a fuller discussion of melodic devices in speech. "Stress" as used here refers to grammatical stress, which is an inherent part of the grammatical construction, and is 'heard' whether or not acoustic cues are present.

9. Because the present study is restricted to evidences of interference, no attempt is made to present a complete description of either English or Spanish intonation, and the concept of pitch motifs has been greatly simplified.

10. Juan Bobo is a character in Puerto Rico folklore. The name means, literally, "Juan, the stupid one." Stories about Juan Bobo are widely read in the primary grades.

11. Shorter lengths might be due to changes of articulatory position in sequences of two or more voiceless consonants. See Goldman-Eisler 1961.

12. Instrumental processing was performed on the Self Auto-Instructional Device (SAID) at the University of Michigan Center for Research in Language and Language Behavior. A portion of the corpus was also processed at Indiana University on the Intensity Meter and Trans Pitchmeter made by B. Frøkjæ- Jensen of Copenhagen, with curves recorded on the Visicorder by Honeywell.

13. Stockwell 1965,(p. 34) notes this "impression of machine-gun-like rapidity" on hearing Spanish, but attributes it to absence of long stressed English syllables rather than absence of segmentation.

14. In a study of Puerto Rican bilinguals made in New York, it was found that reading style (termed "formal" style) contained more pauses than free conversation (Silverman 1968). This, too, may have been the influence of English, which islanders experience to a lesser extent.

15. This point is argued by Cárdenas 1960 (p. 48). He claims that it is the equal clarity with which Spanish syllables are pronounced which gives this effect, and that, according to experimental evidence in Navarro 1948, there are measureable differences in length between stressed and unstressed syllables. He adds, however, that syllable length is not significant.

16. The one exception to the rule of "one word, one stress" is found in adverbs of manner composed of an adjective and the ending /-mente/, which take double stress, as in complétaménte, rápidaménte, etc. For a complete list of stress rules in Spanish, see Cárdenas 1960, p. 43.

17. Secondary stresses are not a serious problem in interference, and are not germane to the discussion.

REFERENCES

Bolinger, D.L., "A Theory of Pitch Accent in English," *Word*, 14.109-149 (1958).

-----, "Acento melódico, acento de intensidad," *Boletin de* Filologia, Universidad de Chile XIII (1961).

Bowen, J.D., "A Comparison of the Intonation Patterns of English and Spanish," *Hispania* 39.30-35 (1956).

Cárdenas, D.N., *Introdución a una comparacion fonologica del español y del ingles,* Center for Applied Linguistics (1960).

Del Rosario, R., *La lengua de Puerto Rico. Ensayos*, Las Americas Publishing Co., New York (1962).

Húltzen, L., "Stress and Intonation," *General Linguistics* 1.35-43 (1955).

Lado, R., "A Comparison of the Sound Systems of English and Spanish, *Hispania*, 39.26-29 (1956).

Lane, H.L., "Foreign Accent and Speech Distortion," *Journal of the Acoustical Society of America*, 35.451-453 (1963).

Navarro, T., *Manuel de entonacion española*, 11th ed., Madrid, 1963.

-----, *El español en Puerto Rico*, University of Puerto Rico, Rio Piedras, 1948.

Nash, R. *Turkish Intonation: An Instrumental Study*, Dissertation, Indiana University, 1967.

Stockwell, R.P. & Bowen, J.D., *The Sounds of English and Spanish*, University of Chicago Press, 1965.

Silverman, S., "A Method for Recording and Analyzing the Prosodic Features of Language," in J. Fishman, Ed., *Bilingualism in the Barrio*, U.S. Department of Health, Education and Welfare, 1968, pp. 859-873.

Weinreich, U., *Languages in Contact*, 2nd ed., The Hague, 1967.